DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1982

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

UNITED STATES SENATE

NINETY-SEVENTH CONGRESS

FIRST SESSION

ON

H.R. 4035

AN ACT MAKING APPROPRIATIONS FOR THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES FOR THE FISCAL YEAR ENDING SEPTEMBER 30, 1982, AND FOR OTHER PURPOSES

PART 4—(Pages 1–736)

Commission of Fine Arts.
Congressional witnesses
Department of Energy
Department of the Interior
National Gallery of Art

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DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1982

WEDNESDAY, MAY 6, 1981

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 9:10 a.m., in room 1224, Everett McKinley Dirksen Senate Office Building, Hon. James A. McClure (chairman) presiding.

Present: Senator McClure.

CONGRESSIONAL WITNESSES

Senator McCLURE. The committee will come to order.

This is the day scheduled to take testimony from Members of Congress concerning appropriations under the jurisdiction of the subcommittee. These involve funds for most of the Interior Department, the Forest Service, the fossil fuels, conservation, regulatory, and informational activities of the Department of Energy, the Indian Health Service, the Smithsonian Institution, and many other related agencies.

Requesting to testify before the subcommittee this morning are:

Senator Melcher, Senator Durenberger and Senator Boschwitz, Congressman Beilenson, and Congressman Barry Goldwater, Jr. We will begin with Senator Melcher.

Senator Melcher.

STATEMENT OF HON. JOHN MELCHER, U.S. SENATOR FROM MONTANA

Senator MELCHER. Mr. Chairman, the administration is wrong to recommend the termination of the magnetohydrodynamics—MHD—program. It was wrong on March 19, 1981, when it sent Congress Rescission Request R81-132. It was wrong to request no money in fiscal year 1982 for MHD. It was wrong again to ask an immediate reduction of $6 million in 1981 research and engineering development money.

Last week the House Appropriations Committee looked at the White House proposals on MHD. The committee did not say the White House was wrong. What they said to the White House was, "Wait a minute; slow down." The House Appropriations Committee rejected the $6 million rescission request, substituting a $6 million deferral, and said further, "Steps to terminate the program should not be taken by the administration pending action by the Congress on fiscal year 1982 appropriations."

I agree with the decision to slow down on this because if the White House takes the time to conduct an intelligent review of the MHD program, some minds over there will be changed.

I don't think MHD should have any special immunity in these days of necessary budget cuts. At the same time, MHD should not be singled out arbitrarily for extinction.

I, therefore, ask this committee to reject the $6 million rescission, approve a $4 million deferral, and restore $2 million for the component development integration facility and for engineering development.

For next year I am asking $40 million, a one-third reduction from the amount requested for fiscal year 1982 by the Carter administration, and a reduction of 60 percent from what the Department of Energy was expected to spend on MHD in fiscal year 1982.

All of us know things are tough financially in the country. If we don't start throwing overboard all the nonessentials, we will go down in flames. But does it make sense, I ask you, to throw out important pieces of the engine in order to keep the plane flying? That's what David Stockman thinks, and I'm afraid he's the economic copilot right now. I think he's wrong.

The initial decision to chop MHD was based on several criteria he developed. To remain operating, a program would have to be focused on long-term, high-risk payoff; Government involvement should continue only through proof-of-concept; and support should be limited to cases where the Government has a unique technical resource or facility.

The MHD research program certainly qualifies for funding under these principles. MHD has been a longer term, high-risk research effort with a substantial payoff approaching a 50-percent increase in coal conversion to electrical energy. The project is still in the proof-of-concept stage at the process development unit scale, and the technical resource and facility is in the hands of the Federal Government.

In that regard, let me point you to the fossil energy program and summary document of May 1980 prepared by the U.S. Department of Energy. That document states that two major Government MHD test facilities are being completed to accommodate key development and integrated engineering tests at larger scales than available elsewhere in the United States. One of those facilities is the component and integration facility which the May 1980 DOE document describes as the largest coal-fired facility in the United States capable of continuous operation. Clearly the CDIF meets the criteria of unique test facility.

The energy research which we do not support today will cost double tomorrow. I do not make the MHD case just as a Senator from Montana; I make it as a person with more than a decade's experience in energy matters who understands very clearly that an artificially balanced energy budget that mortgages our energy security for tomorrow is both bad economics and bad politics.

At a time when we have committed ourselves to energy independence, we must not backtrack on one of the truly promising means of achieving that goal. MHD is a solid bargain at a time when bargains are rare. It removes sulfur from coal. It has the potential of producing more power from a given quantity of coal than other fossil-fuel power systems. It wastes less heat. It requires less cooling water.

I hope the committee will give the request I have submitted today serious consideration in light of the fact that we have the opportunity, if we complete the testing program in the CDIF in Butte during the next 3 to 4 years, for commercialization of the project or of the technology to Montana Power Co., which has asked for a feasibility study to track during the next couple of years the possibility of a joint venture with the Synfuels Corp. for MHD as a topping cycle on their next powerplant which will begin construction in 1987.

This is what we have been trying to do with the technology—get it to the engineering phase so we can have a good model to go commercial within a joint venture. We are all set to do it if we can complete the engineering tests and the CDIF during the next several years, and Montana Power is in there for real. Their application is a very serious one. Mr. McElwain, the chairman of Montana Power, has been in contact with Secretary Edwards during the past 10 days and the Montana Power folks have been in contact with the Synfuels Corp..

So here is what we have been striving to do. By the way, they just generated some more electricity out there at Butte in the past several days, just to show those components are capable of doing it. But there is a lot of engineering work to go on to get a good model to go commercial.

Thank you, Mr. Chairman.

Senator McClure. Senator, you know from our past discussions that I am very sympathetic to the desirability of going forward with this project, and you know as well as I do that we are faced with some very, very tough budget choices this year.

As I recall, the MHD program at Butte was in three phases or three trains. We have been telescoping those, developing each in turn. Rather than putting them sequentially, we have been overlapping or planning to overlap the development of each. So that before we complete the first we started on the second, and before the second is completed we have started the third; is that correct?

Senator Melcher. Well, in a sense it is. The components are under order, and when they are delivered out there to CDIF, they immediately get into the process of testing those components. And actually ordering different components with modifications then is also underway prior to the completion of the test of the work they are presently testing.

Now, this isn't much duplication and really isn't much overlap. I guess it is just up to the best judgments of those engineers as they go along on what modifications would be best next for a particular component.

Senator McClure. In the development of a complex technology, we ordinarily go through the first phase to see what it does. What we have done with the MHD is make a judgment before the completion of the first phase and started the follow-on to the first phase before its completion.

Senator MELCHER. It is really only a difference in engineering, though.

Senator McCLURE. I understand that. We ordinarily wait until we have finished the first one so we have all the engineering data and whatever it will give us in terms of a better understanding.

The only reason I'm going into this at all is not because I desire to find a way to kill the project. I am trying to find a way to keep it alive. And I am not at all certain we are going to be able to find that way.

If I understand correctly, even if the $6 million rescission were passed, there is enough money to operate the facility fully through the balance of 1981. The real problem comes in the advance on the fiscal 1982 program and, second, the question of what happens in that budget. Am I correct?

Senator MELCHER. You are correct, Mr. Chairman.

[Discussion off the record.]

Senator McCLURE. I want to welcome my colleagues from the State of Minnesota. We have the entire Minnesota senatorial delegation here this morning, which could perhaps tell me something about the perceptions in Minnesota about the importance of the issue.

Senator Durenberger, you may proceed.

STATEMENTS OF:

HON. DAVID DURENBERGER, U.S. SENATOR FROM MINNESOTA
HON. RUDY BOSCHWITZ, U.S. SENATOR FROM MINNESOTA

Senator DURENBERGER. I think with due deference to my junior Senator, I am going to let him start on one section of it and I will back him up.

Senator McCLURE. Very well.

Senator BOSCHWITZ. Thank you, Mr. Chairman. This is an important issue to Minnesotans, particularly those in northeastern Minnesota, so I am very happy to testify today, on an issue that we really consider to be important.

On October 1, 1978, Congress passed the Boundary Waters Canoe Area Wilderness Act. The act designated a little over 1 million acres of wilderness and disallowed a lot of mining, explorations, and travel within the wilderness area. All timber sales contracts within the wilderness area were terminated within 1 year and all future logging was prohibited. Snowmobiling was prohibited, with the exception of a number of trails. Motorboating is to be reduced by 50 percent by 1983 and is generally prohibited except in specific areas.

Mr. Chairman, the whole business is still continuing, and we once again find ourselves having some difficulty with the Canadians with respect to some border posts.

The Boundary Waters Canoe Area Wilderness Act required concessions from many sectors in northeastern Minnesota. One of the critical elements of the act was that compensation and assistance be provided to the timber, recreation, and resort interests. Without the specific financial commitments which were outlined in the act, undoubtedly the act would not have passed.

In the fiscal year 1982 budget that we are considering, the administration has not provided the necessary funds for the Forest Service to meet its obligations in two areas. These funds were eliminated in a broad sweep, together with funds from other areas as well, without considering the particular aspects of the problem of this area.

So there are two areas where the Forest Service does not meet its obligations for the 1982 budget.

First, the purchase of resorts as outlined in section 5(A) of Public Law 95–495 and, second, the commitment to the State of Minnesota for intensified forest management on State, county, and private lands as outlined in section 6(D)(2).

My distinguished senior colleague will discuss with you at greater length the reforestation funding to the State. Before that, I'd like to raise the issue of the legal obligation made to the resort owners within the Boundary Waters Canoe Area. And, Mr. Chairman, the vast timbering areas of northeastern Minnesota will be removed, so my colleague's comments on the timbering aspects of this are certainly of great importance.

All of those involved in this controversial legislation have acknowledged the negative impact of its passage on resort industries within the boundaries of the wilderness area. Therefore, section 5(A) of the act clearly states that the Federal Government is required to purchase certain resorts within the boundaries of the wilderness area required, Mr. Chairman. The specific language in section 5(A) states:

> The owner of a resort in commercial operation during 1975, 1976, or 1977 and located on land reparian to any lakes listed below may require purchase of that resort, including land and holdings appurtenant thereto, by written notice to the Secretary prior to September 30, 1985.

In other words, Mr. Chairman, there can be a requirement for purchase. In fiscal year 1980–81, the requirements were $3 million in each year. The funding is from the Land and Water Conservation Fund. President Reagan has proposed eliminating that fund, except for $45 million for emergency purchases and court awards.

So the question becomes, Mr. Chairman, whether or not this enters into that exception.

We feel strongly that no better expenditure of funds could be found than meeting the commitments made in the Boundary Waters Canoe Act. As a matter of fact, I recently sent a letter to OMB Director Stockman asking if, in the opinion of his Department, the resort purchase section of Public Law 95–495 meets the criteria for Land and Water Conservation Funds.

I received his reply yesterday, and in that letter Mr. Stockman says that—and I quote:

> . . . These acquisitions will be eligible to be funded out of the $45,000,000 established for emergency purchases and court awards. It is for precisely this kind of Federal obligation that these funds are requested.

That is a direct quote, Mr. Chairman, from David Stockman.

Mr. Chairman, in conclusion, the Federal Government has a legal obligation and responsibility to meet these purchase commitments. In reaching the agreement, the people of northern Minnesota gave up rights in exchange for the Federal Government's promise of compensation. Minnesotans have truly lived up to their end of the bargain and now Congress should continue to do the same. Therefore, we specifically request the committee to designate and indicate in the committee report language that $2.5 million of the $45 million in the President's Land and Water Conservation Fund budget be earmarked to meet the requirements of the Boundary Water Canoe Act.

Now I would like to yield to my senior colleague who will explain our concerns over the funding levels for reforestation of the northern part of Minnesota.

Senator DURENBERGER. Thank you, Mr. Chairman.

Yesterday morning I attended a breakfast of the national forest products industry people, and our colleague, Mark Hatfield, was the host for the breakfast. He allowed as how he wasn't paying for it, he was just hosting it, but it gave him a right to put some things in perspective.

He started his remarks by reminding the people who were there that 9 or 10 years ago he and other people interested in the future of forests and the forest products industry in this country had gone around the Nation trying to start the organization of a national forest products policy, recognizing the fact that the homebuilding industry and the paper industry and other related industries in this country which were infrastructural to this country, needed to know where the national Government was headed, or where the people of the country, as reflected in national policy, were headed.

He said, "As we are here looking at the scrambled eggs and bacon this morning, we still do not have the kind of national policy we need."

You know that as a fact, and one of our responsibilities is to develop that policy.

In my opinion, we have substituted for lack of that policy with a lot of national, local, State, and private cooperative efforts, looking specifically at the Boundary Water Canoe Area, and prior to 1978 when the BWCA Act was passed, the State of Minnesota had designated no-cut zones for timber harvesting on State lands included within the BWCA as part of the protecting of the wilderness quality of those lands.

But when the act was passed and created a Federally mandated no-cut zone, it included 69,840 acres of State lands which were not included in the original, voluntary, State-designated no-cut zone. The expansion, therefore, of this no-cut zone has had a substantial impact on the State's own cooperative efforts with local government and private foresters in meeting the plan for developing a certain amount of forest product.

The offset in the law was the program for a State-managed forestry program. Public Law 95–495 recognized that the taking of the land would have to be offset by additional programs, and so it set up this program to expedite the intensification of resource management on lands in Minnesota outside the BWCA wilderness in order to offset the loss in timber harvesting.

The provision in the act authorized an appropriation of $3 million a year for fiscal years 1980 through 1990. The moneys authorized at the Federal level were to be matched by a State appropriation of 20 percent of the amount provided. The Minnesota State legislature in the spring of 1979 acted very promptly and authorized for those 2 years of the State biennium not $650,000, as would be required at the 20-percent level, but $750,000.

Again this spring, even though our budget in the State of Minnesota is $5.3 million short of a budget that has been pared down by $1 million by our Government, they remade this commitment to match those Federal moneys because of the importance of this natural resource to the future of the State.

I will just conclude with a, "What if we don't do anything?"

In the last 3 years the combination of the Federal and State matching program, plus other commitments that the State has made, has expanded, for just one example, State nurseries which have already begun growing trees which were to be planted—I mean the seedlings have been grown in the nurseries, and they were to be transplanted in the spring of 1982 and 1983. The increased production contemplated from this nursery program amounts to some 37.6 million seedlings, with an estimated market value of over $1,879,000.

The loss of the BWCA funds that we are talking about here, the $3 million for the fiscal year 1982 appropriation, in effect would mean that we could not get the 37 million seedlings out of the nursery. We would in effect have to plow them under, and that is a substantial resource loss.

So, Mr. Chairman, as my colleague has indicated, we are here to help you and all of us deliver on a commitment that was made before we got here, but a commitment that is understood by everybody in our State, particularly the people who have been involved in building a strong forest products industry. I know that in your good judgment and that of your associates on this committee you will support our efforts to implement the commitment made to the people of the State of Minnesota back in 1978.

PREPARED STATEMENT

Senator BOSCHWITZ. Mr. Chairman, we have a longer statement that I would like to ask be included in the record.

Senator MCCLURE. It will be included, and I note Senator Durenberger had a statement which can be included in the record. You had appended to the statement copies of your letter of April 23 to David Stockman and his reply of May 5. Those letters also will be made part of the record.

Senator BOSCHWITZ. That is a joint statement.

Senator MCCLURE. The joint statement also will be made part of the record in full.

[The statement follows:]

Statement of Senator Rudy Boschwitz

On October 1, 1978 Congress passed the Boundary Waters Canoe Area Wilderness Act. The Act designated 1,075,500 acres as wilderness. Mining and mineral exploration were prohibited within the wilderness area. All timber sales contracts within the wilderness area were terminated within one year and all future logging was prohibited. Snowmobiling was prohibited except along two paths to Canada. Motorboating is to be reduced by 50% by 1983 and is generally prohibited except in specified areas.

The Boundary Waters Canoe Area Wilderness Act required concessions from many sectors in Northeastern Minnesota. One of the critical elements of the Act was that compensation and assistance be provided to the timber, recreation and resort interests. Without the specific financial commitments which were outlined in the Act, it is doubtful this Act would have become law.

In the FY 1982 budget you are considering, the Administration has not provided the necessary funds for the Forest Service to meet its obligations in two areas. First, the purchase of resorts as outlined in Section 5(a) of P.L. 95-495 and second, the commitment to the State of Minnesota for intensified forest management on state, county and private lands as outlined in Section 6(d)(2). My distinguished senior colleague will discuss with you at greater length the reforestation funding to the state. Before that, I would like to raise the issue of the legal obligation made to the resort owners within the Boundary Waters Canoe Area.

All those involved with this controversial legislation acknowledged the negative impact of its passage on the resort industry within the boundaries of the wilderness area. Therefore, Section 5(a) of the Act clearly states that the federal government is required to purchase certain resorts within the boundaries of the Wilderness Area. The specific language in Section 5(a) states:

> "The owner of a resort in commercial operation during 1975, 1976, or 1977 and located on land reparian to any lakes listed below may require purchase of that resort, including land and holdings appurtenant thereto, by written notice to the Secretary prior to September 30, 1985.

In FY80 and FY81 the funding level to meet this requirement was $3 million each year. The funding is from the Land and Water Conservation Fund. President Reagan has proposed eliminating that fund, except for $45 million for emergency purchases and court awards.

We feel strongly that no better expenditure of funds could be found than meeting the commitments made in P.L. 95-495. As a matter of fact, I recently sent a letter to OMB Director Stockman asking if, in the opinion of his Department, the resort purchase section of P.L. 95-495 meets the criteria for Land and Water Conservation Funds. I received his reply yesterday. In the letter Mr. Stockman says "... these acquisitions will be eligible to be funded out of the $45,000,000 established for emergency purchases and court awards. It is for precisely this kind of Federal obligation that these funds are requested.

Mr. Chairman, the federal government has a legal obligation and responsibility to meet these purchase commitments. In reaching the agreement, the people of Northern Minnesota gave up rights in exchange for the federal government's promise of compensation. Minnesotans have lived up to their end of the bargain, now Congress should do the same. Therefore, we specifically request the committee to designate and indicate in the committee report language that $2.5 million of the $45 million in the President's Land and Water Conservation Fund budget be earmarked to meet the requirements of Section 5(a) of P.L. 95-495.

Now I would like to yield to my senior colleague who will explain our concerns over the funding levels for reforestation to the State of Minnesota.

LETTER FROM RUDY BOSCHWITZ

April 23, 1981

The Honorable David Stockman
Director
Office of Management and Budget
Executive Office Building
Washington, DC 20503

Dear David:

As you know, President Reagan's budget as submitted to Congress includes a $290 million reduction in funding for the Land and Water Conservation Fund (LWCF) for FY 1982. Forty-five million dollars is being requested to remain for Federal land acquisition and administration for court awards and emergency purposes.

We have discussed my concerns over proposed funding reductions for programs authorized by the Boundary Water Canoe Area Wilderness Act (PL45-495). Section Five of the Act clearly states that the Federal Government is required to buy a resort if the owner requests buyout. The language states:

> "The owner of a resort in commercial operation during 1975, 1976, or 1977 and located on land riparian to any of the lakes listed below may require purchase of that resort, including land and holdings appurtenant thereto, by written notice to the Secretary prior to September 30, 1985."

The funds to meet the legal requirements of Section Five are eliminated in the FY '82 budget. I would specifically like to know if funds to meet this obligation would be available from the $45 million dollars designated for court awards and emergency purposes.

Thanks for checking into this for me. Obviously it is a matter of great concern to many people impacted by the BWCA Act.

I look forward to your reply.

Sincerely,

Rudy Boschwitz

LETTER FROM DAVID STOCKMAN

MAY 5 1981

Honorable Rudy Boschwitz
United States Senate
Washington, D.C. 20510

Dear Rudy:

This is in response to your letter regarding Section 5 of P.L. 95-495 which requires the U.S. Forest Service to purchase resorts within the Boundary Waters Canoe Area Wilderness if the owners of these businesses request the Forest Service to do so.

The moratorium on land acquisitions announced in February by Secretary Watt was designed to provide flexibility to achieve the proposed rescission of funds for land acquisition and to permit an opportunity for review of pending acquisitions. That review process is underway and it is anticipated that the purchase of resorts in the BWCA will meet the established criteria.

The Forest Service presently anticipates a reduction of $400,000 from the $3,000,000 originally planned to be expended for acquisitions in the BWCA. Of the remaining amount, $1.4 million is presently unobligated, but options to purchase total $879,000. It is expected that these properties will be acquired. Another case is now in the Court of Claims.

Additional requirements in FY 1981 and requirements in FY 1982 will be reviewed on an individual basis. While no funds have been earmarked for the BWCA explicitly, these acquisitions will be eligible to be funded out of the $45,000,000 established for emergency purchases and court awards. It is for precisely this kind of Federal obligation that these funds are requested.

Please be assured that we are aware of the requirements of P.L. 95-495 and intend to acquire properties on a prudent basis as required by that law.

Sincerely,

DAVE STOCKMAN

David A. Stockman
Director

STATEMENT OF SENATORS DAVE DURENBERGER AND RUDY BOSCHWITZ

Mr. Chairman: This is the third time we have appeared before the Interior Appropriations Subcommittee regarding funding provided under the Boundary Waters Canoe Area Wilderness Act, P.L. 95-495. We want to express our thanks to the Committee for their thoughtful and favorable consideration of our requests for the required funding under the BWCAWA. We are pleased to report that the funds appropriated have initiated the forestry programs called for under the act and have done much to restore the confidence of the people of Northeastern Minnesota in government.

The response of the people and the economy of the region has been excellent. There has been a substantial beginning on the intensified forest management program at both the federal and state level and we are now in the final year of the authorized three year program to modify the impact of the federal action on the people and economy of the region.

The following amounts under the revised 1982 budget provide the necessary level of funding for the act and are supported by the Minnesota delegation.

BWCA Funding

	1982 (thousand $)
Research	400
St/PF	(875)
NFS	(2,990)
Ref/TSI	1,190
Recreation	491
Road Mtce.	1,289
LLL	20
C&LA	(3,685)
Recreation	79
Road Const.	3,356
Trail	250
TOTAL	7,950

However, there are two critical omissions under the revised budget which we strongly urge be reinstated. The two provisions are the State Grant program, section 6(c)(2) and the Resort Buyout, section 5.

First, the States Grant Program - Section 6(c)(2) of P.L. 95-495.

In reviewing the issue, it is well to look at the historic development, and basis for the federal state agreement in the act.

By 1976, and prior to U.S. Congressional action on the BWCAWA, the State of Minnesota had designated no-cut zones for timber harvesting on state lands in the BWCA to protect the wilderness quality of those lands. Passage of P.L. 95-495 in 1978, including its extension provisions for the Shipstead-Nolan reservation, created a federally mandated no-cut zone. The federally recognized no-cut zone included 69,840 acres of state lands which were not included in the original, voluntary, state designated no-cut zone. This expansion of the no-cut zone by the Federal government has resulted in the taking of property rights on lands owned by the State of Minnesota, thus resulting in restricted or fee-complex ownership.

In situations such as this, the Federal government has the power, in serving the public interest, to take property rights. However, in such a situation, the Federal government is both morally and legally bound to provide just compensation in the form of cash, property, or privileges to the owners of the property rights which were taken. Congress, in passing P.L. 95-495, recognized this obligation for just compensation, and not only authorized but directed the Secretary of Agriculture to make such compensation available to the State, and its political subdivisions [P.L. 95-495, Sec. 6(c)(2)]. The expressed purpose of this compensation is to "expedite the intensification of resource management ... on ... lands in Minnesota, outside the (BWCA) wilderness, to offset, to the extent feasible, the reduction in the programmed allowable timber harvest resulting from reclassification of the Boundary Waters Area" [P.L. 95-495,Sec. 6(c)(1)].

As finally approved, P.L. 95-495 authorizes an appropriation of $3 million per year for fiscal years 1980 through 1990 inclusive, as just compensation to the State of Minnesota for the purposes of the BWCAW Act. We believe that the reduced level of compensation would be both unjust and inadequate, especially as Congress has continually reaffirmed the principle of full and just compensation (see: Congression

Record - Senate, 11/14/80, pp. S14459-S14461). Moreover, past precedence have been set at the Federal level for much higher rates of compensation for similar situations (see the Redwoods National Park compensation provision, which in the aggregate may have amounted to over 400 million dollars in federal payments).

We believe that the administrative deletion of the BWCAWA funding at this time, without a detailed analysis of the program's costs and benefits in relation to the four national accounts, is unwarranted. A Minnesota Department of Natural Resources Report, dated October, 1979, estimates the potential benefit of the $33 million (total) BWCAWA Federal funding to be $135 million in wages, product values and taxes (including perhaps $44 million in federal income tax revenues), indicating a significantly positive benefit-cost ratio for the program. A second Minnesota Department of Natural Resources report, dated August 11, 1977, indicates that the cost of reforesting and intensifying the output of timber on 69,840 acres of state land outside the BWCA would be $12,990,240. This cost is substantially higher today, due to both real and inflationary price increases. Expressed in 1980 dollars, this cost is estimated to be $18,669,000.

The $18 million referred to above, would provide sufficient funding to bring into production deforested lands outside the BWCA, as a future (i.e., 2020-2040) source of harvestable wood. It would not provide sufficient funding to offset the short term (i.e., 1980-1990) reduction in the programmed allowable timber harvest. To successfully offset this short term reduction requires additional funding for an accelerated timber access (road) and management program on state, county, and private lands outside the BWCA. The total cost of such a program will be nearly $4 million per year during the coming decade. Thus, the total cost of P.L. 95-495 to: (1) provide just compensation; and (2) mitigate reductions in the allowable harvest may well be in excess of $56 million.

As pointed out in the Congressional Record (11/14/80, op.cit.), the provisions of P.L. 95-495 represent a compromise in which the Federal government agreed to finance $33 million, and the state agreed to finance the balance of any forestry related costs of the BWCAWA on non-federal lands in Minnesota. The $18 million level of funding, suggested above, would indicate that Federal appropriations should continue through the authorized period. This would be consistent with Congressional intent, as expressed in P.L. 95-495.

At this time, the Forest Management Intensification Program in the State of Minnesota, has received $6 million which provided the capability initiated to the program which moved through its developmental phase in Fiscal Year 1980, and is now fully operational. As you know, although Congress authorized federal funding for this program through 1990, the appropriation for the program has been cut from the Federal Budget for Fiscal Year 1982 which will have a serious impact on the newly operational program and the economy of Minnesota. (A copy of The BWCA Forestry Intensification Program: A Preliminary Economic Evaluation, October, 1979 is included for the Committee's review and information.)

Based on the eleven year, $33 million commitment of federal funds, the Minnesota Department of Natural Resources developed and implemented a plan for maintaining its programmed allowable timber harvest even though 69,840 acres of state administered timberlands had been placed in wilderness status. Based, in part, on this commitment to maintain the allowable harvest level, Minnesota's forest products industry has invested approximately $500 million in new or expanded plants and facilities. The loss of funding for the program in 1982, coupled with the prior withdrawal of commercial timberlands, will result in the loss of an estimated $14 million to Minnesota's economy in 1982. The Minnesota Department of Natural Resources estimates that a loss of this magnitude will have an immediate adverse impact on some 1,475 citizens of Minnesota, and may possibly eliminate up to 417 jobs in the private sector. In addition, the Department of Natural Resources is projecting that losses of this magnitude will accumulate through 1990, for a total of $135 million in lost economic activity, and over 14,700 people being adversely impacted.

In fiscal years 1980 and 1981, the State of Minnesota invested $952,000 of state funds over and above the matching share required by Section 6(c)(2), P.L. 95-495, to expand its forest tree nursery operations. This expansion involved building additional cold storage facilities as well as purchasing larger capacity seed extraction equipment and increasing the acreage of seedling growing areas. This expansion was necessary to provide the seedlings for anticipated increases in planting programs on federal, state, county and private lands in Minnesota, which resulted from the forest management funding provisions of P.L. 95-495. These expanded state nurseries have already begun growing trees which were to be planted in the spring of 1982 and 1983. This increased production amounts to some 37.6 million seedlings with an estimated market value of over $1,879,000.

The loss of the BWCAWA funds would mean that there will be no money available to get the 37.6 million seedlings out of the nursery, or plant them on denuded forest lands where they are badly needed. Without funding, the state will have no alternative but to plow these trees under, thus wasting them. Some 11 million of these tree seedlings are scheduled to be provided, at cost, to federal agencies, such as the Forest Service and Bureau of Indian Affairs, for use on federal lands, or for use in federally sponsored programs such as the Forestry Incentives Program (FIP) and the Agricultural Conservation Program (ACP).

The loss of the federally funded program itself, will result in significant short-term losses to state, county, and federal government agencies. Over 100 public employees hired to carry out the provisions of the program may face lay-off, resulting in increased unemployment compensation claims. In addition, over $1 million in new equipment, purchased with federal funds, may have to be placed on surplus lists, resulting in both a loss in investment values and productive usefulness to the government.

Based on the increased activities funded by P.L. 95-495, the allocation of FIP dollars for the State of Minnesota has been increased by $100,000. Without the technical assistance and support provided through the BWCAWA funds, there would be little opportunity to increase FIP investments in Minnesota. In fact, there would be an overall decrease of 20 percent in the outputs from the (federal-state) Cooperative Forest Management (CFM) Program in Minnesota. This reduction will result in a significant loss to the federal government, if Forest Service estimates of these program values are correct. Based on research papers published by the U.S.F.S., the FIP, and CFM programs have an internal rate of return to the federal government of 6.7 percent, and a benefit-cost ratio of 11.6 to 1, respectively. Beyond these direct losses, there can only be a continued deterioration in the condition of Minnesota's non-industrial private forest resource - a resource which covers approximately 40% of the forest land in Minnesota.

The Minnesota Department of Natural Resources, in administering the BWCAW Forestry Identification Funds, provides over $1 million in grants and support services annually to county governments for their forest management efforts. Based on the 11 year commitment of federal funds, Minnesota's counties have already invested over $448,500 of their own funds on what were to be continuing forest inventory and management programs. In addition, Minnesota's counties have invested an estimated $1,019,000 of their funds in short-term forest management projects as a probable result of the interest in forestry stimulated by the BWCAWA, and its forest management funding provisions.

In summary, P.L. 95-495 has stimulated substantial forest investment by the Minnesota state and county governments for forest development programs which rely on a continued federal commitment of funds authorized by Section 6(d)(2). The loss of funding for the BWCAWA Program in 1982, alone, will have an adverse impact on both the private and public sectors of Minnesota's economy. The BWCAW settlement was based on many significant compromises. The State of Minnesota was a party to this process, in large part, because of the financial commitments made by the Federal government. We stronbly recommend continued support of these commitments through return of the authorized funds to the Fiscal Year 1982 Federal Budget.

Second, the Resort Buy-out Section 5(A) of the Boundary Waters Canoe Area Wilderness Act (P.L. 95-495).

This section clearly states that the federal government is required to buy a resort riparian to particular lakes within the boundaries of the Boundary Water Canoe Area Wildernss (BWCAW) if the resort owner requests to sell.

> Section 5(A) - The owner of a resort commercial operation during 1975, 1976, or 1977 and located on land riparian to any of the lakes listed below may require purchase of that resort, including land and holdings appurtenant thereto, by written notice to the Secretary prior to September 30, 1985.

The funding to meet the legal obligation of this section is proposed for recission in the FY'81 budget and elimination in the FY'82 budget. The first FY'82 administration budget allocated $2.5 million to meet Section 5 requirements. Obviously, without proper funding the Forest Service cannot meet its legal requirements. We oppose the FY'81 recission of $400,000 and request that necessary funds be specified to meet this requirement in the FY'82 budget based on the following needs:

> Thirty resorts are eligible under Section 5. To date, 19 have expressed an interest in being purchased. Of these, 6 have been paid a total of $2.18 million. Options have been signed at 2 resorts valued at a total of $628,000. Six resorts, with an estimated value of $2.38 million are awating appraisal. The Forest Service estimates another 6 requests in FY'82 at an estimated cost of $2.175 million. In order to meet their obligations the Forest Service will need at least the $2.5 million we are requesting today.

Section 5 is funded through the Land and Water Conservation Fund (LWCF). President Reagan has proposed $45 million in the FY'82 budget for federal land acquisition to provide for emergency purposes and court awards. When the 95th Congress passed the Boundary Waters Canoe Area Wilderness Act they authorized the purchase of resorts because of anticipated economic hardships that would result because of the Act.

We feel strongly that the federal government has a legal obligation and responsibility to meet these purchase commitments. Funds for the Resort Buy Out should be allocated from the $45 million Emergency Fund provided under the Land and Water Conservation Fund.

The provisions for the act are the basis for agreement on P.L. 95-495 and must be funded. Therefore, we request the Committee designate and indicate in the Committee report language that $2.5 million of the $45 million in the President's LWCF budget be earmarked to meet the requirements of Section 5(A) of P.L. 95-495.

The total funding for the BWCAWA with the addition of $3 million for the State Grant Program and $2.5 million for the Resort Buy Out is $13.450 million, down from the current funding level of $13.9.

Certainly, we strongly support the President's leadership in calling for fiscal restraint. However, this does not permit the Federal government to ignore its legal obligation. We urge the Committee to continue its support of that fundamental concept and fund the BWCAWA at the $13.450 million level for FY 1982.

Senator McClure. The dilemma that you face and that we all face is not a unique one, unfortunately. Similar commitments have been made, I think in 50 of the 50 States, and whether we have lived up to that commitment is not a question, because we have not. The question is certainly whether the $45 million fund will be sufficient to meet the acquisition requirements.

I might just add that the administration has suggested that we transfer or create a new fund for maintenance, rehabilitation, and improvements to the Park Service. The authorization language has been broadened to include the Forest Service and other Federal agencies that also have similar demands for catching up with the backlog of capital improvements and the backlog of preventive maintenance. The administration did not support that addition because they wanted the $105 million just for the National Park Service.

We have been probing to try to determine whether those figures are based upon solid estimates or whether they are just figures out of the air. Very frankly, with all due respect to the administration, I think they are figures just grasped out of thin air as a figure toward which to shoot with no real justification to determine whether or not there is going to be enough money to meet the obligations in either the $45 million fund or the $105 million fund. And that is a matter of great concern to me, as I know it will be to other members of the committee.

I would note that the Forest Service has made a grant for State and private forestry of $3 million, if my figures are correct, and the other Federal agencies, Fannie Mae, Farmers Home, and SBA, have also made loans to resort owners in the amount of $10 million in conformance with the objectives of the legislation.

So it isn't that nothing has been done. But I don't disagree with the concern you have expressed that commitments be kept. But I will give you some kind of dimension of the problem.

We have one park where we have $155 million earmarked in one way or another for acquisitions or backlogs of improvements. The Redwoods National Park in California alone has used up its entire authorized amount of $353 million and is only one-third complete. We face some very hard choices in the Congress. Are we going to meet the commitments to the people in California—and there were similar assurances made there. If we took the redwoods and stopped the lumber industry in that area, there was going to be offsetting development so that the economy of the area would not suffer. We haven't kept that promise.

I could go right down a list of dozens of such commitments that have been made. Our appetite for acquisition was far above our capacity to digest properly what we had acquired or what we had set about acquiring. As long as we had the relatively unconstrained budget where it was thought by many that deficits were good for the economy, the only question being how large the deficit should be, it was quite easy to accommodate those promises with the rather casual belief that the future would accommodate whatever the demands may be. But we have come to a day of reckoning.

Senator BOSCHWITZ. Well, we found, Mr. Chairman, some difficulties even in those years. And I wonder, as you speak about the difficulties you have in many States, whether or not some of those people who came to us and asked us to make those kinds of set-asides—do they come before your committee now and seek additional funding to fulfill the commitments that they in large part were responsible for engineering?

Senator MCCLURE. Let me say to you, my friend, they not only come to me in this committee, they buttonhole me in the hallways and on the telephone in my office.

Senator BOSCHWITZ. These same people——

Senator MCCLURE. Many of them aren't here anymore.

Senator BOSCHWITZ. The people from the various environmental groups who push us to make those acquisitions, many of which are well-founded—do they come before this committee and do the work to bring about the fulfillment of the commitments?

Senator MCCLURE. I might say, Senator, they have been less concerned about the economic offset than in the acquisition of the property. They are very much concerned about the continuing acquisition.

Senator BOSCHWITZ. I think it should be a lesson to us in the Senate here that prior to making such new acquisitions or passing legislation for new acquisitions we have to fulfill the commitments that are already outstanding. Because I know people are coming to me and talking about additional acquisitions, additional set-asides for wilderness and other purposes, and I, as you and my colleague and most members, wish to maintain the extraordinary parts of our landscape and retain them in perhaps wilderness or other designations, but the commitments already made have to be fulfilled before support for further acquisitions is forthcoming.

Senator MCCLURE. I can't disagree with that. We are still having a problem setting priorities, and I should confess—it isn't a matter that I have to, but I should confess I voted for most of these acquisitions in the past. In the main, but not without exception, I voted for every addition to the National Park Service authorized in the past years.

I also at the same time insisted on some of the offsetting economic betterment in the area as a quid pro quo for the problems of the local people. It has been harder for the Congress collectively to keep that commitment.

So your plea is not falling on deaf ears. We are going to do the very best we possibly can to meet this need.

Senator DURENBERGER. Mr. Chairman, maybe one point of clarification. I spoke to the record of the past 2 years in terms of meeting through Farmers Home and other agencies some of the economic hardships on the resorts. I just wanted to be sure that the record was clear that there are two kinds of resorts we are talking about here. There are the 32 to 38 resorts within the BWCA which are eligible for the buyout provision, and that is what Senator Boschwitz spoke to you about in terms of the appropriation. I am not sure about the $10 million figure you quoted earlier. It is probably accurate, but it is my understanding that probably that applied to resorts and other businesses outside the BWCA area but inside the economic impact area for which specific provisions were provided in the act to offset the economic hardship.

Senator BOSCHWITZ. I thank my colleague because he is entirely right. It would be very unusual for the SBA to make a loan guarantee to a resort that had been effectively put out of business.

Senator MCCLURE. I don't know why you say that would be unusual. [Laughter.]

It should be.

Thank you both very much.

Congressman Beilenson.

STATEMENT OF HON. ANTHONY C. BEILENSON, REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. BEILENSON. Thank you very much for the opportunity to testify before this subcommittee in support of funding for land acquisition in the Santa Monica Mountains National Recreation Area, an NRA—which Congress established in 1978—located partially in my Los Angeles congressional district.

I just handed to you, sir, a statement by our colleague, Senator Alan Cranston.

Senator MCCLURE. It will be made a part of the record immediately following your statement.

Mr. BEILENSON. Thank you, sir. Senator Cranston from the beginning, of course, has been a strong supporter of this project and feels as strongly about it as the rest of us from California.

Also before you is a petition which includes the signatures of 3,792 people. An interesting thing that has happened in the past couple of months since the freeze on land acquisition has been the very moving amount of support shown by the people in California for this park which so many of them worked for so many years to establish and we now are seeking to continue to establish and to acquire additional lands for.

I think also, Mr. Chairman, you may have in your possession an article in the Los Angeles Times from April 16 entitled, "Santa Monica Mountains—The Hills Are Alive," an example of the incredible amount of variety of use that is already being made of this park, even in its very early stages, to give you some idea of the response of the people in that area to the availability for the first time of this kind of parkland.

Mr. Chairman, every day I receive letters and telephone calls from constituents who are appalled that a President who greatly enjoys the outdoors himself, who was so charmed by the Santa Monica Mountains that he once owned a ranch there, who now spends $52,000 of taxpayers' money to fly to his Santa Barbara ranch for a weekend of outdoor activities and self-renewal—which I personally am supportive of because I understand the need for getting away for that kind of self-renewal—is so oblivious to, or insensitive to, the need for public outdoor recreation in his home territory that he cannot find, in a $700 billion budget, even then. Having spent only a total of $30 million before

Secretary Watt froze LWCF moneys in February, we were already behind schedule when all further purchases as well as negotiations and appraisals were stopped.

One-thousand-two-hundred-and-fifty acres which were negotiated for purchase before the freeze are threatened with immediate development and will be lost if acquisition funds are not released soon. In addition, there are more than 140 willing sellers who will sell their land to buyers other than NPS if acquisition funds are not appropriated. It is this competition between developers and NPS for Santa Monica Mountains National Recreation Area land which makes large sums of money necessary right now. Delaying purchase means losing the land for public recreational use forever.

Even at its price, land in the Santa Monica Mountains is still a bargain in terms of its potential use. Our urban parks are very heavily used: Golden Gate NRA, up in the San Francisco area, had 18 million visitors last year; Gateway NRA had 9 million. Yellowstone, Yosemite, Grand Canyon, and Grand Teton National Parks each had only about 2 million visitors. Here in the Los Angeles area, there are 10 million people who live within an hour's drive of the SMMNRA, and another 8 million who visit the Los Angeles area annually. Because of its proximity to such a large and rapidly growing number of people, the SMMNRA has the potential to be our country's most heavily used national park or recreation area.

Congress did not authorize the SMMNRA or any other urban park without thinking or by accident. We recognized the tremendous needs that exist in our urban areas for open space, for places to escape the noisy streets and polluted air of our densely populated regions. The only mountain range located within a large metropolitan area, the Santa Monica Mountains are truly a unique resource that offers our citizens an opportunity to hike, picnic, enjoy nature, and feel as though they are hundreds of miles away from the city even though it is right below them. Since not many people can afford to visit Yellowstone or Grand Canyon, we have tried to preserve large expanses of land close to population centers. But, without appropriations for land acquisition, those efforts will have been in vain.

Whether we buy the land and make it into a park, or let developers build houses and shopping centers, large amounts of Federal money will be needed for the Santa Monicas, and Senator Cranston alludes to this fact on the third page of the testimony which I gave to you, Mr. Chairman, just a few minutes ago.

The mountains are extremely prone to fires, floods, and mudslides, and unless substantial changes in our flood insurance and other disaster assistance programs are made, the increased number of homeowners who purchase houses in the Santa Monicas and eventually become victims of these natural disasters will require ever-increasing amounts of disaster aid. Our choice is one of either purchasing the land for public recreational uses or subsidizing the unwise building of houses for those wealthy enough to own a home there. I think it is clear that wise use of limited Federal funds requires that we choose funding the park.

We are all concerned about reducing Federal spending wherever possible. But there really are no alternatives to Federal funding for this park and, if we do not buy the land for it now, we never will. Congress must not be so short-sighted that we allow our current fiscal problems to override our concern for the kind of world we will leave to future generations, and make unwise decisions which cannot be reversed.

Mr. Chairman, as I am sure you know, the House Appropriations Committee has recommended that Congress reject the administration's entire fiscal year 1981 rescission request for LWCF appropriations. I hope that your subcommittee will concur with that decision to support those national park projects which have already received commitments from Congress so that parks such as the SMMNRA will not be destroyed.

I thank you again very much, Mr. Chairman, for giving me the opportunity to come over and talk to you about this.

If I might just say briefly, I listened with interest to your conversation with our colleagues and friends from Minnesota, and I understand your point of view very well. I share it. I am a member of the other party, but I am a very conservative person fiscally. In my last few years in the legislature in California I served as chairman of the finance committee, and I grew to be very concerned about how one spends tax money. I have felt, nevertheless, the use of money for parklands is a very wise use of money. If we acquire the land, we have it forever. We don't have to keep reinvesting it as we do in human resources where every year they keep growing. Here if we have the land, we've got it, and that's it. The sooner we acquire the land, the less it costs us, because over the years the costs appreciate tremendously.

I might say, Mr. Chairman, if I may, although we are talking about sizable sums of money, in terms of the overall budget the amount of money necessary to complete the commitments you were talking about earlier is relatively modest compared to other programs which, in my opinion, we are not looking closely enough at in terms of trying to shave the Federal budget.

So although I understand the problems which confront us, I think it makes good sense to invest in those park commitments we have made in the past. I think we made them with our eyes open. I think we made wise decisions in terms of this land we want to preserve, and all of us know if we don't acquire the land in the near future we will lose it forever.

As a person who spent a lot of his youth hitchhiking around the country and caring about and loving the land, it is the potential for losing our parklands for homes—which we have some homes and subdivisions mushrooming in our area—and Federal funds will be involved anyway for disaster assistance and flood control and things of that sort, and perhaps more money for servicing these unneeded and unwise homes than purchasing the land for park area.

I hope we can continue not only in this area, but in other areas where we have made commitments in the past few years, to honor those commitments.

PREPARED STATEMENT

Senator McClure. Congressman, I understand the feelings you have expressed, and you have provided to the committee a petition bearing nearly 4,000 signatures which will be made a part of the file of the committee with respect to this issue.

[The statement follows:]

STATEMENT OF CONGRESSMAN ANTHONY C. BEILENSON

I appreciate the opportunity to testify before this Subcommittee in support of funding for land acquisition in the Santa Monica Mountains National Recreation Area, an NRA--which Congress established in 1978--located partially in my Los Angeles Congressional district.

Every day I receive letters and telephone calls from constituents who are appalled that a President who greatly enjoys the outdoors himself, who was so charmed by the Santa Monica Mountains that he once owned a ranch there, who now spends $52,000 of taxpayers' money to fly to his Santa Barbara ranch for a weekend of outdoor activities and self-renewal, is so oblivious to, or insensitive to, the need for public outdoor recreation in his home territory that he cannot find, in a $700 billion budget, the modest amount of funding necessary to make the Santa Monica Mountains accessible to all. Frankly, I was shocked myself at Interior Secretary James Watt's proposal for a five-year moratorium on all federal land acquisition--an action far more drastic than I anticipated. Certainly I expected some funding cuts for land acquisition in the several Parks and Recreation Areas we are engaged in creating or augmenting--not a complete halt to the National Park Service's (NPS) land acquisition program everywhere.

Realistically, for the Santa Monicas, a five-year moratorium on land acquisition is not a moratorium at all--it is a final action which would destroy the park. The pressure to develop land in the Santa Monicas is so strong that if we wait five years to begin buying land again, the areas now considered prime park land will have already become an extension of Los Angeles' vast suburban sprawl. Appreciating at a rate of 20-40% per year, what land is left five years from now will be much, much more expensive--probably prohibitively so.

When Congress authorized $155 million for the SMMNRA in 1978, the timetable for acquisition was clearly designed to spend large amounts of money immediately, rather than delay expenditures, primarily because land there does appreciate so rapidly.④ Having spent only a total of $30 million before Secretary Watt froze LWCF monies in February, we were already behind schedule when all further purchases as well as negotiations and appraisals were stopped. One thousand two hundred and fifty acres which were negotiated for purchase before the freeze are threatened with immediate development and will be lost if acquisition funds are not released soon. In addition, there are more than 140 willing sellers who will sell their land to buyers other than NPS if acquisition funds are not appropriated. It is this competition between developers and NPS for SMMNRA land which makes large sums of money necessary right now. Delaying purchase means losing the land for public recreational use forever.

Even at its price, land in the Santa Monica Mountains is still a bargain in terms of its potential use. Our urban parks are very heavily used: Golden Gate NRA had 18 million visitors last year; Gateway NRA had nine million. Yellowstone, Yosemite, Grand Canyon, and Grand Teton National Parks each had only about two million visitors. There are ten million people who live within an hour's drive of the SMMNRA, and another eight million who visit the Los Angeles area annually. Because of its proximity to such a large and rapidly growing number of people, the SMMNRA has the potential to be our country's most heavily used national park.

Congress did not authorize the SMMNRA or any other urban park without thinking, or by accident. We recognized the tremendous needs that exist in our urban areas for open space, for places to escape the noisy streets and polluted air of our densely populated regions. The only mountain range located within a large metropolitan area, the Santa Monica Mountains are truly a unique resource that offers our citizens an opportunity to hike, picnic, enjoy nature, and feel as though they are hundreds of miles away from the city even though it is right below them. Since not many people can afford to visit Yellowstone or Grand Canyon, we have tried to preserve large expanses of land close to population centers. But, without appropriations for land acquisition, those efforts will have been in vain.

Whether we buy the land and make it into a park, or let developers build houses and shopping centers, large amounts of federal money will be needed for the Santa Monicas. The mountains are extremely prone to fires, floods, and mudslides, and unless substantial changes in our flood insurance and other disaster assistance programs are made, the increased number of homeowners who purchase houses in the Santa Monicas and eventually become victims of these natural disasters will require ever-increasing amounts of disaster aid. Our choice is one of either purchasing the land for public recreational uses, or subsidizing the unwise building of houses for those wealthy enough to own a home there. I think it is clear that wise use of limited federal funds requires that we chose funding the park.

We are all concerned about reducing federal spending wherever possible. But there really are no alternatives to federal funding for this park and, if we do not buy the land for it now, we never will. Congress must not be so short-sighted that we allow our current fiscal problems to override our concern for the kind of world we will leave to future generations, and make unwise decisions which cannot be reversed.

The House Appropriations Committee has recommended that Congress reject the Administration's entire FY 1981 rescission request for LWCF appropriations. I hope that your Subcommittee will concur with that decision to support those national park projects which have already received commitments from Congress, so that parks such as the SMMNRA will not be destroyed.

Statement of Senator Alan Cranston, U.S. Senator From California

Mr. Chairman, I much appreciate having this opportunity to present testimony in support of continued funding for the Santa Monica Mountains National Recreation Area from the Land and Water Conservation Fund.

As you know, the Santa Monica Mountains contain some of Southern California's finest mountain and coastal scenery -- sandy beaches, coastal bluffs and canyons, high mountain meadows, and hillsides covered with sage, yucca and chapparal. Stretching from the Pacific Ocean to the heart of downtown Los Angeles, the Santa Monica Mountains provide recreational open space not only for the 10 million people living in the Los Angeles Basin, but for the millions of tourists from across the nation and around the world who visit Southern California each year.

In 1978 Congress recognized the national significance of the Santa Monica Mountains by establishing the Santa Monica Mountains National Recreation Area. Since that time, the National Park Service has identified 40,000 acres of undeveloped land which it feels should be acquired for the park and Congress has appropriated $50.5 million from the Land and Water Conservation Fund for this purpose. The land acquisition program has been going well and the National Park Service has acquired key parcels, including the Paramount Ranch, Danielson property and Reich estate.

However, the Reagan Administration has proposed a recission of $105 million in FY 1981 Land and Water Conservation Fund monies and an appropriation of only $45 million nationwide for LWCF in FY 1982. Under this proposal, Santa Monica Mountains would lose $20 million of its FY 1981 appropriation and would receive no monies in FY 1982. Unless it is the Administration's intent to deauthorize the Santa Monica Mountains park -- and there is absolutely no justification for such an action -- it doesn't make good economic sense to halt the acquisitions, nor is it in the public interest.

The value of land in the Santa Monica Mountains is the most rapidly accelerating of any land proposed for park acquisition in the nation, and it is under extreme pressure by private developers and subdividers. In fact, roads are being built, mountains leveled, and homes constructed, eliminating potential parkland even today. It's my understanding that at least 20 tracts of land involving over 1200 homes have already been approved within the National Recreation Area, though most of the homes have not yet been built. Developers have also requested approvals of at least 36 more housing tracts and 5 commercial tracts, totalling 2839 units. In addition, developers are preparing plans for 8 more parcels, involving 2864 units. The threat is present throughout the Santa Monica Mountains so there is a danger the park will become fragmented if we wait. But the greatest threat to the integrity of the park as a whole is the Fact that some of the largest developments proposed are at Sampo Ranch, Claretville Basin, and Palo Comando, which the National Park Service has determined can best handle large number of picnickers, campers and hikers, and are easily accessible. Failure to acquire these areas in time would greatly reduce public use of and access to the Santa Monica Mountains park.

Mr. Chairman, right now we still have a chance of putting together a national park with high scenic, natural and recreational values. But the lands must be acquired now for the park or more of this outstandingly beautiful coastal mountain region may be lost for park use forever.

The National Park Service could use the entire $20 million of the proposed recission right away as well as additional monies -- as much as $35 million -- in FY 1982 The acquisition of the Temescal, Roth, Hope, Satterle, Whitzen, and Runyon properties was underway at the time the moratorium was imposed and appraisals were being made of other proposed parklands. The Trust for Public Lands has an option on the 1800 acre Cheeseboro Canyon property, the second largest acreage in a single ownership in the park. The property is priced at $6 million, substantially below fair market value and if acquired first by TPL and subsequently by the government the acquisition would represent a savings of $3 to $4 million to the American taxpayers. But the option must be exercised by July 1, 1981. This opportunity, like others, will be lost if we do not appropriate adequate funds for the Land and Water Conservation Fund in FY 1982 and specifically for the Santa Monica Mountains National Recreation Area.

Mr. Chairman, I am convinced that we are going to be spending federal money in the Santa Monica Mountains one way or the other. If more development occurs, the federal government will be funding much of the cost of the roads, sewers, and other infrastructures. In addition, the Santa Monica Mountains is a disaster prone area. In recent years, there have been both fires and floods. The California Office of Emergency Services indicates that federal disaster payments to Santa Monica Mountains residents have ranged from $6800 to $9550 in direct cash grants and services plus low-interest loans of $55,000 to rebuild homes in the same disaster prone location. As development continues, the potential outlay of disaster funds is going to be much greater. In fact, on the basis of disaster relief savings alone, it may be cost-effective to buy the Santa Monica Mountains as parklands.

In truth, Mr. Chairman, the Santa Monica Mountains merit and deserve preservation as part of our national park system. There is no question that we must act now. So I urge you and the members of the Committee to disapprove the proposed recission of FY 1981 Land and Water Conservation Fund monies and appropriate additional monies in FY 1982.

Senator McClure. I have supported the acquisitions, as I stated earlier. I have supported the policy that tilted the expenditure of funds away from capital improvements and maintenance in order to put more money into acquisitions. I have done that for years because of the persuasiveness of the argument that if you don't acquire the lands they will be lost, or the opportunity to acquire them will be lost.

But we have about come to the point where, just as the last two Senators pointed out, we are not keeping the commitments made for the capital improvements, and certainly the preventive maintenance and the routine maintenance of the facilities has suffered during that period of time, too. We are down to the point where Yosemite periodically has been destroyed, and every time we try to save it we do it by limiting people's use and reducing the amount of facilities for the use by people.

Mr. Beilenson. I understand completely. My family and I are real users of the national parks. We have been to all but six or seven of them. I worked one summer in Yellowstone, and we go to Yosemite all the time. I understand those needs. And I am hopeful that if Kemp-Roth is passed and really starts producing a lot of additional revenues to our treasury, we can increase in the improvements that are necessary.

But as you said, it is necessary to acquire the land first. And if I had to make a choice, I'd rather go ahead and do that even at the risk of not making some of the improvements which are clearly needed, knowing we can make them 3 or 4 or 10 years down the line as long as we have the land.

I am well aware of your past record of support for many of these things, and I know that being from a beautiful State such as you are you clearly care about these kinds of things as I do.

Senator McClure. You indicated that in your opinion much of this land should not be subdivided, that it would be an unwise use of the land even aside from whether it should be a park.

Mr. Beilenson. Yes.

Senator McClure. Have local zoning ordinances reflected that concern at the local level?

Mr. BEILENSON. Not to the extent they should have. The local people have not nearly been so wise as they should have been in land use in a whole variety of things, including that, quite frankly, the county and city of Los Angeles should have created the park themselves. I think a very strong case has been made for its use as a recreation area.

But the city has not been good about it. The city has part of the area and part of it is within the county, and the Board of Supervisors have always been overly responsive to subdividers in the county of Los Angeles, and they are granting too many subdivisions in these mountains.

And I think for these reasons and, as Senator Cranston points out in the third page of his testimony, there may be more sizable uses of Federal money to pay for disaster insurance and flood control in these areas than there would be to acquire the land for park purposes now.

Senator MCCLURE. I appreciate your testimony and that of Senator Cranston, and we will do the very best we can.

Mr. BEILENSON. I thank you, and thank you for this opportunity to come over and testify.

Senator MCCLURE. Thank you.

Congressman Goldwater.

STATEMENT OF HON. BARRY M. GOLDWATER, JR., REPRESENTATIVE IN CONGRESS FROM THE STATE OF CALIFORNIA

Mr. GOLDWATER. Good morning, Mr. Chairman.

Senator MCCLURE. Good morning. You are welcome before the committee. We will listen to your testimony with great interest.

Mr. GOLDWATER. Mr. Chairman, I was happy to see my colleague and friend, Tony Beilenson, here testifying basically on the same subject and the interest we happen to share in the Santa Monica Mountains and on which we have worked over the years on trying to find a vehicle or way of accomplishing the same thing.

Mr. Chairman, I thank you for allowing me to appear. I want to talk about three things, basically.

One, the use of the Land and Water Conservation Funds.

Second, the need for national recreation areas, specifically, as an example, the need for the Santa Monicas.

And, third, I'd like to get into a discussion of how we can achieve more open space, parklands, and protect our resources with the reduced level of funding that we are faced with this year.

First of all, Mr. Chairman, in regard to the Land and Water Conservation Fund, like yourselves and like Interior Secretary James Watt, I am interested in eliminating waste, in reducing inflation, in minimizing Federal involvement wherever reasonable and possible, and of supporting and encouraging local and State efforts to achieve solutions to local and State problems. But I do not support changing the law, nor the intent, of the Land and Water Conservation Fund.

Now, the Secretary has called for a moratorium, in essence, while we reexamine our policies in this area. Mr. Chairman, I do not feel we need this moratorium while we are reexamining the direction and the use of these funds or this program. There is too great a price to pay. There are too many contracts outstanding. There are negotiations underway. There are individuals and corporations who are on the verge of or in the process of exchanging lands, conveying lands. And to put a moratorium on, in essence, is to grind to a halt all of this process, the damage of which can be measured in economic terms as well as waste of human effort and interest.

Now, Mr. Chairman, you expressed, I believe, in the 94th Congress your equal concern—and I quote from you:

> The Land and Water Conservation Fund was intended as a trust fund, because we had been unable to get a sufficient amount of money in the appropriations process to sustain a suitable level of activity in the development of outdoor recreation opportunities.

I also believe that the use of the Land and Water Conservation Fund to provide for needed urban recreation lands is a promise—a trust—to the public, and it should be treated accordingly.

Further, since the fund is financed from the sale of surplus Federal property, from Federal motorboat fuel taxes, from recreation user taxes, and from part of the revenues from Federal oil and gas leases on the outer continental shelf, its continued use to serve the recreational needs of the country is appropriate and should not affect our budgetary considerations.

Somehow we have to put these into a trust and treat them separately outside of the unified budget, in my opinion. This obviously would apply to other kinds of trusts that we have created over the years, such as the highway trust fund, the airport airway trust fund, and others. Too often these trusts are held in hostage to a balanced budget and not used as they were intended or collected.

I think Secretary of the Interior James Watt tends to agree with this policy. In his document, "Outdoor Recreation - A Legacy for America," he states:

> To increase the availability of recreation resources, the Federal Government will continue to utilize the Land and Water Conservation Fund to acquire needed Federal lands and assist the States in acquiring and developing recreation lands and facilities. As demands for Federal acquisitions are reduced, more of the fund moneys will be made available to the States.

Maybe we should look to the proper role of the Federal Government vis-a-vis the State and local governments. And certainly I think we always need to review that, and obviously always need to encourage State and local government participation and involvement, and perhaps even taking a greater role than in the past. But in the meantime, Mr. Chairman, these moneys are available; the need exists. And I do not support a moratorium, nor do I support curtailing these activities while we in the Congress and the Nation reexamine these policies.

Turning to my second point that I want to talk about, the need for national recreation areas, and specifically the Santa Monicas, as Tony Beilenson indicated—and there is a map for the chairman—this area contains the only major natural open space and coastal zone available to meet the recreational and attendant health-giving spaces for an urban population of nearly 10 million people and millions of visitors from across the Nation.

Over 20 years of effort on the part of thousands of volunteers have been put into this undertaking, and after 10 years of promise and achievement in Federal recognition, I think that it is vitally important that we help to complete the saving of the Santa Monica Mountains and seashore.

Therefore, I am here to request funding to continue the land acquisition program that has started.

While we must face the challenge to our economic health, we must also face the degradation of the quality of life in our major urban areas, and equally meet this challenge.

We have a growing urban population, a growing population with more leisure time, a population with lessening mobility or mobility at the expense of costly energy.

We know, or should know, from many of the studies that have been conducted—and I quote:

> That crowding and the inability to find open-space relief has led to breakdowns in family structure, antisocial relationships, undue emotional and physical stress, and violence.

I am quoting from the findings of Dr. John Calhoun who conducted studies in population dynamics for the Department of Health, Education, and Welfare. And I'll leave you with other references as to the positive impacts of urban open space, both in terms of public health and economics.

I think, Mr. Chairman, the pictures I sent up to the chairman really speak for themselves. You really see the densely populated Los Angeles County area, and then you see the smog as it rolls in every once in a while. And then you see——

Senator McClure. What do you mean every once in a while? I noted that picture where you can see the town and the mountains and wondered what rare day that was.

Mr. Goldwater. Mr. Chairman, I am part of the Chamber of Commerce, and I have to give some credibility to the fact that southern California is a beautiful place to live.

Senator McClure. It once was.

Mr. Goldwater. Well, we have a lot of people, and a lot came from back East because of that beauty out there, and now we have a problem.

I want to point out, however, that not only did the climate attract people but certainly the quality of life. And the fact that people have come from all over the world, in fact, to enjoy this beauty has added to the problem. And I want to point out that the Federal Government had a lot to do with the degradation of the quality of that life out there, and that is one of the reasons that we at the Federal level can't turn our back.

For instance, it was Federal funding that helped create the freeway network out there, in fact encouraged that network to be developed there, with several Federal programs for redevelopment projects which in a carrot-and-stick kind of way encouraged rapid development. And certainly Federal financing for housing and subservices only increased the cost of those services and helped perpetuate urban sprawl.

The Federal dollar, acting as a catalyst without any consideration for its impact, in essence helped create the problems we face today.

Guided by this kind of uncoordinated Federal funding, local governments contributed additional short-sighted land-use policies without evaluating the long-range consequences nor the overriding cost of services.

Thus, the Federal Government assisted in creating the existing urban crunch described by Los Angeles County planners as "urban blight, congestion, pollution, economic decline, and explosive social unrest." And we at the Federal level, because we had a part in encouraging this, cannot simply walk away from it.

Urban parks do allow people to get south of that dense population and cleanse their minds and bodies. And the Santa Monica Mountains presents itself as a unique opportunity to demonstrate that for a population that is getting out of control.

Because the Federal Government has played such a part in creating this problem—and I don't minimize the part of State and local governments in participating—all three of us need to address ourselves to this problem, and the Santa Monica Mountains offers an opportunity to part of us to provide a solution to the problems we face.

The last thing I want to cover is: How can we do more with less? And I submitted to the committee a paper I submitted to Mr. Seiberling's authorizing committee in the House of Representatives.

Senator McClure. That will be made part of the record in full.

[The information follows:]

Mr. Chairman, I am committed to restoring economic stability, but I'm also committed to protecting our natural resources, our environment, and the health and welfare of our people.

How do we achieve both?

My purpose today is to present a plan of alternative tools that will meet both objectives.

Some of the tools now exist. Some have been tried on a smaller scale before and have been successful. Some may require new enabling legislation, but they all require a commitment to innovation and to aggressively pursuing the possible instead of wasting energy fighting over the improbable.

The basis of this concept is the Federal government, acting as a catalyst, to bring together State and local governments, and private property owners and citizen volunteers to expand the idea of urban parks beyond the borders of simple acquisition.

We need to give the National Park Service these new complimentary tools and strongly encourage them to use them in a creative way.

In general, my suggestions are as follows:

1. Establish a revolving fund for acquisition purposes. The fund can be administered through established agencies or commissions. The money in the fund can be used in a manner to insure, wherever possible, its return for further use. This can be achieved by:

   A. Purchase for partial resell. A portion of the land can be designated for specific compatible development, and that parcel rezoned to recapture all of a portion of the original total purchase price.

   B. Purchase for partial lease to private investors. The use might be designated by the Park Service, or it might be open to competitive proposal bids.

   Any development of this land should be compatible with the overall plan and with the surrounding areas.

2. Seek out private and corporate donations for either endowments to the fund or to actually purchase land to be deeded over. We might even increase the attractiveness of a donation by naming that portion of the park after the donor.

3. Land exchange with Bureau of Land Management. BLM excess lands can be used for sale or exchange.

4. Allow private camps, equestrian facilities, golf courses, and so on, to remain as compatible recreation areas.

5. Land exchange within the park or national recreation area.

6. Land exchange outside park boundary.

7. Voluntary dedication of scenic easement.

8. Low interest loans to "public service" entitites such as the Trust for Public Lands in coordination with the National Park Service.

9. Seek out landowners who would establish by deed specific resource protection, scenic easements, to limit development and limited public use--such as trails and viewsites--in exchange for a "certificate of non-acquisition" and appropriate tax credits.

10. Additional tax incentives: Federal, State, and local.

11. The role of the private property owner and private enterprise can be complimentary to this whole process. The direct participation of property owners--in the role of steward--through appropriate and compatible land use or protection can relieve government of both the expense of initial purchase and the continuing expense of management.

COOPERATIVE ACTIVITIES

1. Integrate other Federal agency programs with the Park Service needs. For example: the Job Corps could do work-and-learn projects in exchange for use of recreational facilities. Another area might be the Department of Transportation UMPTA programs as part of a transportation system.

2. Use the National Park Service staff to create "task force teams" as innovators, educators, and project leaders to community leaders involved in park-related projects.

3. Consultation with developers: seek compatible development.

4. Consultation with property owners: compatible landscaping and architecture; and recommendations on locating trails across private property that are suitable for equestrians and hikers.

5. Consultation with other agencies involved in preparing land use plans.

6. Recreation transit program: transport inner-city youth, handicapped, and seniors.

Mr. Chairman, in conclusion, this list is compatible with direct Federal acquisition, and by no means is this list complete. Working together, I'm sure we can add additional ideas.

The President's proposal to "zero out" all funding for 1982 is unreasonable. There is a middle ground. There is an alternative. There are compatible tools, if properly used, that can substitute for hard dollars.

Cooperation and a willingness to try new approaches through a coordinated effort on many fronts and on many levels can answer the need for open spaces even in the face of budget limitations. Thank you.

IF THE FEDERAL GOVERNMENT IS GOING TO DISPOSE OF EXCESS LANDS TO THE STATES FOR MANAGEMENT, MAYBE IT IS APPROPRIATE THAT THE TITLE TO THE PROPERTTIES CONDITION THEIR USE TO PROVIDE ADEQUATE PROTECTION TO THE NATURAL RESOURCE.

WHERE APPROPRIATE, PROPERTIES ACQUIRED FOR THE PURPOSE OF RESOURCE PROTECTION MIGHT BE SO CONDITIONED AS TO COMPATIBLE OR APPROPRIATE USE AND THEN RETURNED TO THE PRIVATE SECTOR IN ORDER TO RETURN THE ORIGINAL INVESTMENT.

PRIVATE PROPERTY OWNERS WITHIN THE NATIONAL PARK (AREA OF PUBLIC INTEREST) MIGHT BE AFFORDED THE OPPORTUNITY OF APPROPRIATELY DEED RESTRICTING THEIR PROPERTY TO MEET THE NEEDS OF RESOURCE PROTECTION AND LIMITED PUBLIC USE (WITH POSSIBLE CONTROL OF SAID USE BY THE PROPERTY OWNER IF THE PUBLIC ABUSES THE PRIVILEGE OF USE) IN EXCHANGE FOR AN "AGREEMENT OF NON-CONDEMNATION" AND TAX CREDIT FOR SUCH DONATION.

TRAIL EASEMENTS AND OTHER LIMITED PUBLIC USES OF PRIVATE PROPERTIES MIGHT BE PUT UNDER THE CONTROL OF LOCAL PROPERTY OWNER ASSOCIATIONS AND BE MANAGED AND MAINTAINED BY "DEPUTIZED" USER VOLUNTEERS WORKING IN COORDINATION WITH THE PARK SERVICE.

THESE ALTERNATIVES ARE MEANT TO BE COMPLIMENTARY TO THE IN FEE ACQUISITION REQUIRMENTS FOR WHICH FUNDING IS NECESSARY, NOT A SUBSTITUTE. MY INTENT IS TO USE THE FUNDING AND THESE NEW TECHNIQUES TO ACHEIVE GREATER PROTECTION FOR THE RESOURCE, AND GREATER RECREATIONAL OPPORTUNITIES FOR LARGER NUMBERS OF PEOPLW IN THE SHORTEST POSSIBLE TIME.

Mr. GOLDWATER. You and I are committed to restoring economic stability, but I am also committed to protecting our natural resources, our environment, and the health and welfare of our people.

How do we achieve both?

My purpose today is to present a plan of alternative tools that will meet both objectives.

Some of the tools now exist. Some have been tried on a smaller scale before and have been successful. Some may require new enabling legislation, but they all require a commitment to innovation and to aggressively pursuing the possible instead of wasting energy fighting over the improbable.

The basis of this concept is the Federal Government, acting as a catalyst, to bring together State and local governments, and private property owners and citizen volunteers to expand the idea of urban parks beyond the borders of simple acquisition.

In summary, Mr. Chairman, without elaborating on this paper, what I am basically talking about is that all agencies, all Federal programs, are being asked today to carry part of the weight, carry part of the burden, carry part of the water by having a reduced level of funding. As onerous as this may be to proponents of specific programs, the fact still remains we had a mandate during this last election, and without the election, the desperate need to get under control our economy and the tremendous escalating growth of the Federal Government.

The President has asked us all to participate by finding areas where we can reduce the levels of funding and get under control this growing Government. And I don't have any problem with doing it. But I happen to think, with the Secretary zeroing out all further acquisitions and park and recreational activities, it is asking us to go too far. But I think we can go along with reduced funding.

In the past the Park Service, armed with a fat wallet, in essence, has pursued one policy, going out with fee acquisition. I think maybe in those days that was all right, but in today's burden of the Federal dollar we are going to have to do more with less. And I am saying there exists today useful tools, alternatives, that can make up the slack where we do not have those dollars.

And I have a list of proposals, some of which are available, some of which the Park Service has already tried from time to time, and some of which may need some changing in the law in order to provide those tools to the Park Service.

Unfortunately, the Park Service, as I said, having a fat wallet, has a tendency not to use these additional tools in effecting the same thing.

I would like to send to the chairman some pictures of a ranch in the Santa Monica Mountains called The Saddle Rock Ranch. It is a little over—well, it is close to 400 acres, and it is kind of like a diamond in the rough. This property was acquired by a gentleman for one purpose, and that was to preserve that beautiful area. And the Park Service, up until the freeze, was intent on purchasing it to the tune of anywhere from $5 to $7 million.

The owner resisted. He didn't want to sell. He said, "Listen, I moved up here because the Santa Monicas are beautiful. I don't want to develop it. I want to keep it as it is," which is basically a cattle and horse ranch and fenced-in beautiful green property, as you can see.

Well, with the freeze coming on, my staff and myself and a few others went back to the gentleman and said, "Well, how far will you go?" And we are in the process of negotiating with him, and I think we have reached agreement that for no dollars we will get a scenic easement put in his deed so that no further development will ever happen there; we will preserve it as it is.

Furthermore, there are some very important hieroglyphic Indian writings on some rocks on his property, and he has agreed to grant an easement there which he will build and maintain. He is also granting an easement for a horse trail across his property.

So, in essence, we didn't acquire the property which would have been ideal and what everybody would want, but because we have to work *with less dollars we are going to have to look to a different approach.* And here, with no expenditure, we acquired maybe 80 percent of what we were looking for.

And it is that kind of example of what the Park Service should be trying to do. There are people who moved to these scenic areas for the very purpose of what the Park Service wants, and that is preservation. And through land swaps with the BLM, programs encouraging donations by corporations and individuals, by tax treatments to act as an incentive for people to donate land—these kinds of tools, I think, are available today for the Park Service, and those which are not we need to examine and make available.

But it is not necessary, like a bulldozer, to go out and totally acquire property when, in fact, we can do almost the same thing without the expenditure of dollars. And I think today we have an opportunity to find these creative alternative tools.

So in summary, Mr. Chairman, the Land and Water Conservation Fund is an important trust and a vehicle that allows us to address ourselves to some serious problems, such as urban blight and the problems we face in Los Angeles with a dense population of over 10 million people—to address ourselves through the acquisition and acquiring of open space as a relief valve for these citizens in the Santa Monica Mountains, which is very important, which I hope we can continue to acquire and to create.

And last, Mr. Chairman, I think there are alternatives to full funding to fee acquisition that the Park Service needs to be encouraged to explore wherever possible. We do need that Federal dollar, however, where areas are critical, and in the peripheral areas where, as you see in those pictures, development is taking place rapidly in that area, we need the hard dollars to acquire those that are in jeopardy right now. But in the backwoods and back areas we have a little more time to do the same sort of thing as we have been doing with fee acquisition.

Senator McClure. Thank you very much, Congressman. I read both your statement and the attachment to it, which has been made a part of the record, and I particularly note the list of alternative actions which might be available and which might be used, and I commend you for the suggestions. I think they are both valuable and innovative. Some of them we have tried to encourage land managers to use in the past and they have refused to. The acquisition of scenic easement has been used only when we mandated it. When it was merely available to the Forest Service or the Park Service, they did not use it.

And I can give you case after case where they didn't try to use it, and the result was we, as a nation, were forced to change land use to a more restrictive, less productive land use without really enhancing what it was we were trying to achieve, at great cost to the taxpayer and, I would add, at great cost to local governments who were deprived of a tax base.

Without belaboring the point, I could mention the Hells Canyon National Recreation Area where we did want to stop subdivision; we did not want to see the character of that land changed at the lower reaches of the middle Snake River below Hells Canyon, and the Forest Service was encouraged to use scenic easements. They never once tried. They forced the landowners into a subdivision mode in order to force their hand toward fee acquisition, which is what the Forest Service wanted in the first place.

So the suggestion is good. Maybe we now have an administration that will carry it out. We have not had an administration that would carry it out in the past.

I am very sympathetic to the suggestions that you have made, but I would say, too, that scenic easements or land exchanges can be made more costly or less costly based on the involvement of local governments. Local governments in that area have not been as helpful as they should have been, if indeed they cared. Local zoning can very greatly reduce the cost of fee acquisition, of scenic easement acquisition, or of exchange activities.

But if local government doesn't care, then we have to conclude that maybe there is a large body of public opinion in that area that doesn't care. Should we at the Federal level override local interests? Well, sometimes where there is national interest we have to do that.

But certainly there is a responsibility on the part of local government, and I don't think local government in that area has done what should have been done. You are not responsible for that, I know, and I won't even ask you to comment on it, but I feel very strongly about it, that it is wrong for local government and people in the area to always come to the Federal Government without seeking any help at the local level first. And once they have gotten a Federal program adopted, they just pass the buck to the taxpayers of the nation generally without ever attempting to ease the burden or to cooperate in lifting that burden or cooperate in achieving the goals established by the Federal legislation.

So I hope that we can indeed take some of the suggestions that you have so constructively set forth in your statement and actually put them into practice so they come as not just good ideas but good practices.

Mr. GOLDWATER. Mr. Chairman, you bring up obviously a very painful kind of reality. And you are absolutely right. And I tend to concur with you. The city and the county of Los Angeles have yet to adopt a master land-use plan, and it has been an ongoing process of trying to do it. It is obviously not an easy task.

But our efforts to preserve open space in the Santa Monicas would be greatly enhanced if the county of Los Angeles would really get off the dime. They could complete anything we might do and in essence help.

I hasten to point out to those individuals who want to do nothing but go up there and acquire land that we don't have enough money to acquire even the designated land of the Santa Monica Mountains. That area which has been designated as an NRA in the Santa Monicas, the price tag is over $600 million. People don't realize that. Only $150 mllion has been authorized at the Federal level.

Senator MCCLURE. And we have between a $2 and $3 billion backlog in authorized acquisitions.

Mr. GOLDWATER. Where are you going to make up the $150 million authorized and the $600 million cost today? You can make that up by, as you stated, getting local government to be more responsible. Through their zoning powers they can set aside lands, zone them so they are compatible. By using these complementary tools I mentioned, if we get the full funding of $150 million—if we utilize these other things such as land swaps and donations and so on, we can make up the difference between $150 million and $600 million.

That is what I'm talking about, but it is going to require a cooperative effort between State and local governments. But I think the Federal Government can play a vital role as a catalyst in bringing these together.

Mr. Chairman, I have one other topic to present to you and it won't take more than 10 seconds.

Senator MCCLURE. I assume the 10 seconds is illustrative and not literal.

Mr. GOLDWATER. Illustrative.

I want to talk to you about a meat-eating buzzard called the California condor. And this beautiful bird—some people don't think it's very pretty but I think it's beautiful—is the largest bird in the world living today, with a wing span of 9 feet. There are only about 20 or 30 of these buzzards left. And there is an ongoing program of the National Audubon Society which has been very responsive and doing an excellent job in developing a very careful program to try to save these buzzards, these condors. And I am hopeful that you and your committee will look favorably upon a request of adding some additional moneys to this request so we can try to save them.

I think they are important. As we well know, we have allowed mankind to run detrimentally over endangered species, and I don't think this is too much money to ask to allow these fellows to continue to exist and be as beautiful as they are.

PREPARED STATEMENT

So I hope you will look at my request and the need to have a good program here that looks good and well-managed.

Senator MCCLURE. Thank you very much, Congressman.

[The statement follows:]

STATEMENTS OF SENATOR BARRY M. GOLDWATER

SANTA MONICA MOUNTAINS AND SEASHORE

MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE: I'M HERE TO TALK ABOUT:

1) THE USE OF LAND AND WATER CONSERVATION FUNDS;
2) THE NEED FOR THE NATIONAL RECREATION AREAS, AND THE PARTICULAR NEED FOR THE SANTA MONICA MOUNTAINS NATIONAL RECREAION AREA TO SERVE THE FEDERAL INTEREST AND INVESTMENT; AND
3) HOW TO ACHIEVE MORE PARKLANDS AND RESOURCE PROTECTION WITH A REDUCED LEVEL OF FUNDING.

MR. CHAIRMAN AND MEMBERS, LIKE YOURSELVES AND LIKE INTERIOR SECRETARY JAMES WATT, I AM INTERESTED IN ELIMINATING WASTE, IN REDUCING INFLATION, IN MINIMIZING FEDERAL INVOLVEMENT WHEREVER REASONABLE AND POSSIBLE, AND OF SUPPORTING AND ENCOURAGING LOCAL AND STATE EFFORTS TO ACHIEVE SOLUTIONS TO LOCAL AND STATE PROBLEMS. BUT I DO NOT SUPPORT CHANGING THE LAW, NOR THE INTENT, OF THE LAND AND WATER CONSERVATION FUND.

CHAIRMAN JAMES McCLURE EXPRESSED HIS VIEW THAT "THE LAND AND WATER CONSERVATION FUND WAS INTENDED AS A TRUST FUND, BECAUSE WE HAD BEEN UNABLE TO GET A SUFFICIENT AMOUNT OF MONEY IN THE APPROPRIATIONS PROCESS TO SUSTAIN A SUITABLE LEVEL OF ACTIVITY IN THE DEVELOPMENT OF OUTDOOR RECREATION OPPORTUNITIES." I ALSO BELIEVE THAT THE USE OF THE LAND AND WATER CONSERVATION FUND TO PROVIDE FOR NEEDED URBAN RECREATION LANDS IS A PROMISE -- A TRUST -- TO THE PUBLIC, AND IT SHOULD BE TREATED ACCORDINGLY.

FURTHER, SINCE THE FUND IS FINANCED FROM THE SALE OF SURPLUS FEDERAL PROPERTY, FROM FEDERAL MOTORBOAT FUEL TAXES, RECREATION USER TAXES, AND FROM PART OF THE REVENUES FROM FEDERAL OIL AND GAS LEASES ON THE OUTER CONTINENTAL SHELF, IT'S CONTINUED USE TO SERVE THE RECREATIONAL NEEDS OF THE COUNTRY IS APPROPRIATE, AND SHOULD NOT EFFECT OUR BUDGETARY CONSIDERATIONS.

SECRETARY OF THE INTERIOR JAMES WATT, USING THE DOCUMENT, "OUTDOOR RECREATION - A LEGACY FOR AMERICA" AS HIS POLICY, STATES: "TO INCREASE THE AVAILABILITY OF RECREATION RESOURCES, THE FEDERAL GOVERNMENT WILL CONTINUE TO UTILIZE THE LAND AND WATER CONSERVATION FUND TO ACQUIRE NEEDED FEDERAL LANDS AND ASSIST THE STATES IN ACQUIRING AND DEVELOPING RECREATION LANDS AND FACILITIES. AS

DEMANDS FOR FEDERAL ACQUISITIONS ARE REDUCED, MORE OF THE FUND MONIES WILL BE MADE AVAILABLE TO THE STATES."

MAYBE WE SHOULD LOOK AT HOW THE STATES CAN ASSUME MORE OF A MANAGEMENT RESPONSIBILITY AND CAPABILITY BY EFFECTING THIS POLICY. MAYBE THE NATIONAL PARK SERVICE CAN ACT AS A CATALYST TO BRING ABOUT A BETTER LAND USE POLICY IN THE CENTERS OF POPULATION. I THINK THAT THERE IS A RESPONSIBILITY, THAT THERE IS A NEED, AND THERE IS A WAY.

I WANT TO DISCUSS THE NEED FOR OPEN SPACE AND PARK IN THE CENTER OF ONE OF THE LARGEST URBAN POPULATIONS IN THE UNITED STATES, THE SANTA MONICA MOUNTAINS AND SEASHORE.

THIS UNIQUE AREA CONTAINS THE ONLY MAJOR NATURAL OPEN SPACE AND COASTAL ZONE AVAILABLE TO MEET THE RECREATIONAL AND ATTENDANT HEALTH GIVING SPACES FOR AN URBAN POPULATION OF NEARLY TEN MILLION PEOPLE, AND MILLIONS OF VISITORS FROM ACROSS THE NATION. FORMER SECRETARY OF INTERIOR WALTER HICKEL DESCRIBED:

> "The Range, together with the adjoining beaches, forms the greatest untapped natural resource in the second largest metropolitan area in the nation."

OVER TWENTY YEARS OF EFFORT ON THE PART OF THOUSANDS OF VOLUNTEERS HAVE BEEN PUT INTO THIS UNDERTAKING, AND AFTER TEN YEARS OF PROMISE AND ACHIEVEMENT IN FEDERAL RECOGNITION, I THINK THAT IT IS VITALLY IMPORTANT THAT WE HELP TO COMPLETE THE SAVING OF THE SANTA MONICA MOUNTAINS AND SEASHORE.

THEREFORE, I'M HERE TO REQUEST FUNDING TO CONTINUE THE LAND ACQUISITION PROGRAM THAT HAS STARTED.

~~GENTLEMEN,~~ WHILE WE MUST FACE THE CHALLENGE TO OUR ECONOMIC HEALTH, WE MUST ALSO FACE THE DEGRADATION OF THE "QUALITY OF LIFE" IN OUR MAJOR URBAN AREAS, AND EQUALLY MEET THIS CHALLENGE.

- WE HAVE A GROWING URBAN POPULATION;
- A GROWING POPULATION WITH MORE LEISURE TIME;
- A POPULATION WITH LESSENING MOBILITY;
  OR MOBILITY AT THE EXPENSE OF COSTLY ENERGY;

WE KNOW, OR SHOULD KNOW, FROM MANY OF THE STUDIES THAT HAVE BEEN CONDUCTED, "THAT CROWDING AND THE INABILITY TO FIND OPEN SPACE RELIEF HAS LED TO BREAKDOWNS IN FAMILY STRUCTURE, ANTI-

SOCIAL RELATIONSHIPS, UNDUE EMOTIONAL AND PHYSICAL STRESS, AND VIOLENCE."

I'M QUOTING FROM THE FINDINGS OF DR. JOHN CALHOUN WHO CONDUCTED STUDIES IN POPULATION DYNAMICS FOR THE DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE. AND I'LL LEAVE YOU WITH OTHER REFERENCES AS TO THE POSITIVE IMPACTS OF URBAN OPEN SPACE, BOTH IN TERMS OF PUBLIC HEALTH AND ECONOMICS.

WE CAN TALK ABOUT RENEWAL, ABOUT RENEWING OUR CITIES, BUT WE CANNOT AFFORD TO BUY AND TEAR OUT HOUSING FOR PARKS AND OPEN SPACE. WE NEED TO ACQUIRE THESE VITAL LANDS NOW, WHILE THEY STILL EXIST!

I DON'T BELIEVE THAT OUR NATIONAL RECREATION AREA PROGRAM WAS INTENDED, OR EVER SHOULD BE, THE EXCLUSIVE RESPONSIBILITY OF THE FEDERAL GOVERNMENT. IT SHOULD BE A COORDINATED EFFORT BETWEEN LOCAL, STATE, AND FEDERAL LEVELS OF GOVERNMENT, AND BECAUSE THE LARGER URBAN AREAS ARE OF SUCH NATIONAL CONCERN BECAUSE THEY CONSTITUTE SUCH LARGE SCALE AND COMPLEXITY, THEY ARE LIKELY GOING TO NEED SOME OVERALL HELP.

THE ISSUE OF URBAN LAND USE HAS ALWAYS BEEN A COMPLEX PROBLEM. WHILE LOCAL GOVERNMENT HAS BEEN BASICALLY RESPONSIBLE FOR THE DESIGNATED USE OF URBAN LANDS, IT HAS BEEN FEDERAL FUNDING AND INVOLVEMENT THAT HAS GREATLY CONTRIBUTED TO WHAT HAS HAPPENED IN CALIFORNIA AND ALL OF OUR CITIES: FEDERAL FUNDING HELPED CREATE THE FREEWAYS WITHOUT TIMELY CONSIDERATION OF PUBLIC TRANSIT ALTERNATIVES; FEDERAL PROGRAMS MADE FOR REDEVELOPMENT PROJECTS WITHOUT CONCERN FOR THE QUALITY OF LIVING CREATED BY SUCH PROJECTS; FEDERAL TAX INCENTIVES HELPED CONVERT CLOSE-IN AGRICULTURAL LANDS INTO HOUSING TRACTS WITHOUT CONSIDERING WHAT THE LOSS OF THOSE UNIQUE FOOD PRODUCING LANDS WOULD DO TO THE COST OF FOOD: AND FEDERAL FINANCING FOR HOUSING FAR FROM PUBLIC SERVICES ONLY INCREASED THE COSTS OF THOSE SERVICES AND HELPED PERPETUATE URBAN SPRAWL. THIS KIND OF FEDERAL INVOLVEMENT SHOULD STOP.

GUIDED BY THIS KIND OF UNCOORDINATED FEDERAL FUNDING, LOCAL GOVERNMENTS CONTRIBUTED ADDITIONAL SHORT-SIGHTED LAND USE POLICIES WITHOUT EVALUATING THE LONG-RANGE CONSEQUENCES NOR THE OVERRIDING COST OF SERVICES.

THUS, THE FEDERAL GOVERNMENT ASSISTED IN CREATING THE EXISTING "URBAN CRUNCH" DESCRIBED BY LOS ANGELES COUNTY PLANNERS AS "URBAN

BLIGHT, CONGESTION, POLLUTION, ECONOMIC DECLINE AND EXPLOSIVE SOCIAL UNREST", AND WE CAN'T SIMPLY WALK AWAY FROM IT.

THE SANTA MONICA MOUNTAINS AND SEASHORE OFFERS US THE UNIQUE OPPORTUNITY TO DEMONSTRATE THAT WISE FEDERAL PLANNING CAN BE A MODEL EXAMPLE FOR THE REST OF THE COUNTRY.

MY POINTS ARE SIMPLY THESE:

1) THAT THE LAND AND WATER CONSERVATION FUND IS DERIVED, IN EFFECT, FROM USER FEES;

   THAT THE FUND IS INTENDED TO REPLENISH OR REPLACE THE KIND OF RESOURCE THAT IS BEING USED -- OR USED UP.

   THAT THE FUND IS, IN EFFECT, A TRUST -- AND SHOULD NOT EFFECT BUDGETARY CONSIDERATIONS.

2) THAT THE LAND AND WATER CONSERVATION FUND SHOULD REMAIN INTACT FOR OPEN SPACE AND RECREATION LAND AQUISITIONS, WHETHER BY THE FEDERAL GOVERNMENT OR THROUGH THE STATES AND LOCAL GOVERNMENTS -- ON A COORDINATED BASIS.

3) THAT URBAN OPEN SPACE LANDS ARE CRITICAL TO THE PUBLIC HEALTH, AND THAT THE PUBLIC HEALTH IS CRITICAL TO A HEALTHY ECONOMY.

4) THAT THE FEDERAL GOVERNMENT CAN EXERCISE SOME IMAGINATIVE CONSTRAINTS AND INCENTIVES AS TO HOW THOSE LAND AND WATER CONSERVATION FUNDS ARE TO BE USED, BOTH BY FEDERAL AGENCIES, AND BY STATE AND LOCAL GOVERNMENTS -- SO AS TO ACHIEVE GREATER SUCCESS, OVER A BROADER AREA, WITH LESS EXPENDITURE OF FUNDS.

   WHICH IS STILL TO STRESS -- THAT WITHOUT ADEQUATE FUNDS WE CANNOT SUPPORT NOR ENCOURAGE STATE AND LOCAL PARTICIPATION; THAT WITHOUT ADEQUATE FUNDS WE CANNOT ACCOMPLISH A COORDINATED EFFORT; WITHOUT ADEQUATE FUNDS THE PUBLIC CANNOT COMPETE IN THE MARKET PLACE FOR APPROPRIATE LAND USE; AND WITHOUT ACEQUATE FUNDS, "A LEGACY FOR AMERICA" IS JUST EMPTY WORDS. THANK YOU.

IN 1972, I PARTICIPATED IN THE NATIONAL RECREATION PLAN IN SAN FRANCISCO. SOME OF THE ISSUES I BROUGHT FORTH AT THOSE HEARINGS ARE ALTOGETHER MORE CRITICAL TODAY; PARTICULARLY THE RELATIONSHIP BETWEEN PUBLIC HEALTH AND OPEN SPACE IN URBAN AREAS. THIS HAS BEEN THE SUBJECT OF MANY RESEARCH PROJECTS.

1. DR. JOHN CALHOUN, IN 1958, UNDER A PROGRAM FUNDED BY THE U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE BEGAN STUDIES

OF POPULATION DYNAMICS RELATING TO SPACE REQUIREMENTS. HE CONCLUDED THAT CROWDING AND THE PHYSICAL INABILITY TO FIND (OPEN) SPACE RELIEF LED TO MANY BREAKDOWNS IN FAMILY STRUCTURE, ANTI-SOCIAL RELATIONSHIPS, UNDUE EMOTIONAL AND PHYSICAL STRESS, AND VIOLENCE.

2. IN 1970, DR. BERTIL LILLEHOOK, MINISTER OF PUBLIC HEALTH IN SWEDEN, PUBLISHED AN ECONOMIC ESSAY RELATING THE COSTS OF PUBLIC HEALTH CARE TO URBAN OPEN SPACE IN SCANDINAVIA. HIS REPORT INDICATED THAT AN ADEQUATE URBAN OPEN SPACE AND RECREATION SYSTEM COULD REDUCE PUBLIC HEALTH CARE COSTS BY AS MUCH AS 50 PERCENT.

3. IN 1967, FRENCH SOCIOLOGISTS AND PSYCHOLOGISTS CONDUCTED A SERIES OF TESTS AND STUDIES OF STABILITY IN TYPICAL FRENCH FAMILIES. THEY FOUND DIRECT RELATIONSHIPS BETWEEN LACK OF SPACE AND UNSTABLE FAMILY STRUCTURE.

4. DR. EDWARD HALL, A NOTED U.S. ANTHROPOLOGIST, PUBLISHED HIS FINDINGS IN THE BOOK HIDDEN DIMENSIONS AND THESE FINDINGS DEMONSTRATE THAT HIGH STRESS, INSTABILITY, AND VIOLENCE COULD DIRECTLY RELATE TO THE LACK OF SPACIAL (OPEN SPACE AND RECREATION) RELIEF IN URBAN SETTINGS.

5. NUMEROUS RECENT STUDIES, RELATING TO "QUALITY OF LIFE," INDICATED THAT RECREATION AND OPEN SPACE AREAS WERE CONSISTANTLY AMONG THE HIGHEST PRIORITY ITEM DEMANDS BY METROPOLITAN URBAN DWELLERS AND PARTICULARLY BY INNER CITY AND DISADVANTAGED PERSONS.

6. MANY FEDERAL AND UNIVERSITY INITIATED URBAN STUDIES CONSISTANTLY INDICATE THAT STRESS IS THE RESULT OF CROWDING. THESE STUDIES CONCLUDE THAT THE CREATION AND ENHANCEMENT OF OPEN SPACE AND RECREATION AREAS IN CONGESTED URBAN CENTERS CAN SIGNIFICANTLY REDUCE EMOTIONAL AND PHYSICAL STRESS, RELATED CRIME AND VIOLENCE, AND OTHER PUBLIC HEALTH PROBLEMS.

CALIFORNIA CONDOR RECOVERY PROGRAM

MR. CHAIRMAN AND SUBCOMMITTEE MEMBERS: I HAVE LONG BEEN CONCERNED ABOUT THE POSSIBLE EXTINCTION OF THE CALIFORNIA CONDOR. THE CALIFORNIA CONDOR IS THE LARGEST FLYING BIRD IN NORTH AMERICA WITH A WING SPAN OF OVER NINE FEET. AT THE PRESENT TIME, HOWEVER, WE ESTIMATE THAT THERE ARE TWENTY TO THIRTY CONDORS LEFT IN THE WILD. IF THE DECLINE OF TWO TO THREE BIRDS A YEAR CONTINUES, THE SPECIES COULD BECOME EXTINCT IN EIGHT TO TWELVE YEARS. THEREFORE, IT IS VITALLY IMPORTANT THAT THE FISCAL YEAR 1982 APPROPRIATION TO THE FISH AND WILDLIFE SERVICE BE

INCREASED BY $200,000 IN ORDER TO EFFECTIVELY IMPLEMENT THE CALIFORNIA CONDOR RECOVERY PROGRAM.

SINCE 1975, A PLAN OF ACTION HAS BEEN EVOLVING TO PRESERVE THE CONDOR. BUT FUNDS WERE NECESSARY TO IMPLEMENT THE RECOVERY PROGRAM. IN 1979, BECAUSE OF THE CONCERNED EFFORTS OF THIS SUBCOMMITTEE, WE PROVIDED $500,000 IN FEDERAL FUNDS FOR THE PRESERVATION OF THE CONDOR. IN ADDITION, THE NATIONAL AUDUBON SOCIETY SUCCESSFULLY MATCHED THOSE FUNDS THROUGH PRIVATE DONATIONS.

LAST YEAR, AS PART OF THE RECOVERY EFFORT, THE U.S. FISH AND WILDLIFE SERVICE BEGAN A CAREFULLY CONCEIVED CAPTIVE BREEDING PROGRAM. TRAGICALLY, A CONDOR CHICK DIED. AS A RESULT, AND ACCORDING TO CONTINGENCY PLANS, ALL TRAPPING OPERATIONS STOPPED IMMEDIATELY, AND A FULL EVALUATION OF THE PROGRAM'S PROCEDURES WERE THOROUGHLY EVALUATED. WE HAVE LEARNED MUCH SINCE THEN, LARGELY AS A RESULT OF TRAPPING EXPERIMENTS WITH ANDEAN CONDORS. THE U.S. FISH AND WILDLIFE SERVICE HAS WISELY DECIDED TO PROCEED WITH THEIR RECOVERY EFFORTS.

WE MUST DO ALL WE CAN TO SAVE THIS ENDANGERED SPECIES. WE HAVE SEEN WHAT HAS HAPPENED TO OTHER ENDANGERED SPECIES IGNORED BY MAN, AND WE MUST NOT LET IT HAPPEN TO THE MAJESTIC CALIFORNIA CONDOR. THE DUSKY SEASIDE SPARROW, FOR EXAMPLE,IS BIOLOGICALLY EXTINCT BECAUSE THE SIX BIRDS LEFT IN THE WILD ARE ALL MALES, AND ATTEMPTS AT CAPTIVE BREEDING WERE INITIATED TOO LATE.

MR. CHAIRMAN, $250,000 HAS BEEN BUDGETED FOR FISCAL YEAR 1982. DUE TO A DELAY IN GETTING A PERMIT FOR CAPTIVE BREEDING AND TELEMETRY PLUS THE NEED TO INITIATE RODENTICIDE STUDIES AND HABITAT STUDIES WE NEED $447,000 TO GET THE RECOVERY PROGRAM MOVING. THIS CALLS FOR AN ADDITIONAL $200,000 FOR FISCAL YEAR 1982. FOLLOWING IS A SPECIFIC BREAKDOWN OF THE ADDITIONAL FUNDS NEEDED:

$47,000	Region I (Hopper Mt. National Wildlife Refuge and Recovery Team)
$179,000	Research (biologist, Andean Condor trapping technique experimentation, Habitat Specialist)
$50,000	(biologist contract; monitoring of only active nesting site)
$80,000	(field personnel salaries and telemetry experiments)
$50,000	Rodenticide Studies
$5,000	Environmental contaminants investigation
$5,000	Captive Breeding

$10,000	Field Surrogate Studies
$20,000	Intensive habitat studies

MR. CHAIRMAN, WE CANNOT GUARRANTEE THAT THE CONDOR WILL SURVIVE, BUT THE CALIFORNIA CONDOR IS A SYMBOL OF THE ENDANGERED SPECIES' PLIGHT. THE CONDOR RECOVERY PROGRAM IS A CHALLENGE TO TRY TO DO WHAT WE CAN TO SAVE A SPECIES WHICH IS, QUITE LITERALLY, ON THE BRINK OF EXTINCTION. THANK YOU.

FIRESCOPE

MR. CHAIRMAN: EVERYONE IS AWARE OF THE DANGER TO LIFE AND PROPERTY AS A RESULT OF BRUSH AND FOREST FIRES. WILDLAND FIRE STARTS HAVE INCREASED BY 130 PERCENT SINCE 1960, THE NUMBER OF LARGE FIRES IS INCREASING; AND THE PUBLIC COSTS AND LOSSES NOW AVERAGE CLOSE TO $45 MILLION PER YEAR. THE FIRE-FIGHTING RESOURCES OF SOUTHERN CALIFORNIA ORGANIZED FOR POTENTIAL EMERGENCIES (FIRESCOPE) SYSTEM IS A PROVEN PROGRAM WHICH HAS DEMONSTRATED A SOLID RECORD OF ACHIEVEMENTS IN FIGHTING FIRES. ACCORDING TO THE PRESIDENT'S BUDGET PROPOSALS, HOWEVER, THE FIRESCOPE PROGRAM WILL NOT RECEIVE FUNDING FOR FISCAL YEAR 1982.

IF THE BUDGET IS MAINTAINED FOR FIRESCOPE AT THE FY80 LEVEL OF $2.4 MILLION, THE SYSTEM CAN BE COMPLETED BY FY86 AT A BENEFIT-COST RATIO OF $1.5 FOR EVERY $1. THE LOSS ESTIMATED TO OCCUR TO THE FIRESCOPE PROGRAM IF NOT FUNDED - $2 TO $10 MILLION. THE PROGRAM IS DESPERATELY IN NEED OF BEING FUNDED AT THIS LEVEL SO THAT MANPOWER AND EQUIPMENT WILL BE AVAILABLE TO EFFECTIVELY FIGHT BRUSH AND FOREST FIRES IN AN EMERGENCY SITUATION.

BUT THE FIRESCOPE SYSTEM DOES MUCH MORE THAN HANDLE FOREST FIRES. FOR EXAMPLE, DAMAGING FLOODS HIT SAN BERNARDINO, CALIFORNIA IN JANUARY OF 1980. MOST CITY DEPARTMENTS WERE INVOLVED IN THE RESCUE OPERATION. THE INCIDENT COMMAND SYSTEM, A HIGHLY EFFICIENT SYSTEM OF THE FIRESCOPE PROGRAM WHICH STANDARDIZES INCIDENT ORGANIZATIONAL STRUCTURES, DATA GATHERING, REPORTING AND TERMINOLOGY WAS PUT INTO PARTIAL USE AT THIS TIME.

THE FIRESCOPE SYSTEM, MANAGING FIVE SIMULTANEOUS INCIDENTS, HAS BEEN SHOWN TO BE COST-EFFECTIVE IF IT INCREASES FIRE SERVICE PERFORMANCE BY ONLY 5 PERCENT, AND THE ECONOMIC BENEFITS WILL RANGE BETWEEN ONE AND NINE MILLION DOLLARS ANNUALLY DEPENDING ON THE LENGTH AND SEVERITY OF THE FIRE SEASONS. THESE SAVINGS HAVE BEEN PROVED BY THE FIRE AGENCIES THEMSELVES. FOR EXAMPLE, EVEN WHEN THE SYSTEM WAS ONLY FORTY PERCENT COMPLETED, FIRESCOPE CONTRIBUTED SUBSTANTIALLY TO THE SAVING OF OVER FIVE THOUSAND ACRES AND SEVERAL HOMES DURING THE 1979 CALIFORNIA FIRE SEASON. BECAUSE OF FIRESCOPE'S EFFICIENCY, ANOTHER ONE HUNDRED THOUSAND DOLLARS RESULTED IN DIRECT COST SAVINGS.

STATE, COUNTY, AND OTHER LOCAL FIRE SERVICE AGENCIES HAVE SPENT ABOUT $4 MILLION IN STAFFING, EQUIPMENT AND FACILITIES TO SUPPORT THE PROGRAM, DEMONSTRATING AN EARNEST EFFORT ON THEIR BEHALF TO ASSUME PART OF THE FINANCIAL RESPONSIBILITY OF FIRESCOPE. FURTHERMORE, AS THE FIRESCOPE SYSTEM IS IMPLEMENTED, THE COST TO THE FEDERAL GOVERNMENT WILL DECREASE WHILE STATE AND LOCAL AGENCIES WILL CONTINUE TO ASSUME MORE AND MORE OF THE FINANCIAL RESPONSIBILITY. THE COOPERATING AGENCIES WILL SPEND ABOUT EIGHT HUNDRED THOUSAND DOLLARS ANNUALLY TO OPERATE AND MAINTAIN FIRESCOPE AFTER IT IS FULLY IMPLEMENTED. APPROXIMATELY $1.8 MILLION IN MATCHING FUNDS HAS BEEN SPENT BY STATE AND LOCAL AGENCIES. EXCLUDING FEDERAL PROGRAM ADMINISTRATIVE COSTS, THIS AMOUNTS TO ALMOST HALF OF THE TOTAL EXPENDITURES FOR A SINGLE YEAR'S APPROPRIATIONS.

THE FIRESCOPE PROGRAM IS JUST ABOUT COMPLETED AND WE ARE STARTING TO SEE THE RESULTS OF OUR DEDICATED EFFORT IN CREATING A MORE EFFICIENT AND HIGHLY ORGANIZED SYSTEM OF FIREFIGHTING, AS WAS DEMONSTRATED DURING THE 1979 FIRE SEASON IN CALIFORNIA. WITHOUT FIRESCOPE AND OTHER SIGNIFICANT IMPROVEMENTS IN FIRE MANAGEMENT, EMERGENCY COSTS ARE LIKELY TO INCREASE AS MUCH AS FOUR TIMES BY THE YEAR 2000.

MR. CHAIRMAN, THE FIRESCOPE SYSTEM IS A VITAL PROGRAM IN OUR WAR ON BRUSH AND FOREST FIRES. OUR INVESTMENT IN THIS HIGHLY EFFICIENT AND EFFECTIVE PROGRAM IS AN INVESTMENT IN A SAFE AND SECURE FUTURE.

SUBCOMMITTEE RECESS

Senator McClure. That completes the action of the subcommittee this morning. We will convene again at 9 o'clock tomorrow morning to review the fossil energy program at the Department of Energy.

The subcommittee is recessed.

[Whereupon, at 10:30 a.m., Wednesday, May 6, the subcommittee was recessed, to reconvene at 9 a.m., Thursday, May 7.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1982

THURSDAY, MAY 7, 1981

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 9:26 a.m., in room 1224, Everett McKinley Dirksen Senate Office Building, Hon. James A. McClure (chairman) presiding.

Present: Senators McClure and Byrd.

DEPARTMENT OF ENERGY

STATEMENT OF ROGER W. A. LE GASSIE, ACTING ASSISTANT SECRETARY FOR FOSSIL ENERGY

ACCOMPANIED BY:

CARL W. GUIDICE, DEPUTY ASSISTANT SECRETARY FOR MANAGEMENT, OFFICE OF FOSSIL ENERGY
ANTHONY LICCARDI, OFFICE OF COAL TECHNOLOGY
EDWARD LIEVENS, PROGRAM DIRECTOR FOR MAJOR PROJECTS
BENNIE DIBONA, OFFICE OF OIL, GAS, AND SHALE TECHNOLOGY
ELLISON BURTON, OFFICE OF RESOURCE APPLICATIONS

BUDGET REQUEST

Senator MCCLURE. The committee will come to order.

Good morning. This is the time scheduled to review the fiscal 1982 budget requests for the Department of Energy's fossil energy, domestic energy supply, and Federal leasing accounts.

The combined fossil energy research and development and fossil energy construction request for fiscal year 1982 is $435 million, a decrease of some 61.6 percent from the original 1981 combined appropriation of over $1.13 billion. Pending before this subcommittee are rescission requests totaling some $314.4 million. There is no fiscal year 1982 funding request for the domestic energy supply and Federal leasing activities.

Representing the Department this morning is Mr. Roger LeGassie, Acting Assistant Secretary for Fossil Energy. Mr. LeGassie, let me again welcome you before this subcommittee. Please introduce whoever else will be appearing with you, and proceed to highlight your statement in whatever way you wish.

As always, your written statement will be printed in full in the record.

OPENING STATEMENT

Mr. LEGASSIE. Thank you, Mr. Chairman. It is a pleasure to appear again before this committee.

I would like to introduce Mr. Carl Guidice, sitting at the table with me, who is the Deputy Assistant Secretary for Management in Fossil Energy.

Behind me in the audience are other Deputy Assistant Secretaries who I may call upon to assist me if questioning gets into some of the technical details of the program. They are: Mr. Anthony Liccardi, who is responsible for coal technology; Mr. Bennie Dibona, who is the Deputy acting for oil, shale, and gas; and Mr. Edward Lievens, who is acting for major projects.

And they have with them additional staff as well.

In terms of highlighting my testimony, I would like to make a few brief remarks. As you are aware, this budget request of the fossil energy research and development program and related activities, including leasing, represents a significant change in direction for the Department of Energy which we think is appropriate. We have taken a number of steps in putting the 1982 budget together and related changes in the 1981 budget to reflect the following concepts:

First, it is not appropriate for the Federal Government to be acting in a research and development way in technologies which are on the verge of commercialization. We believe those activities are better conducted by the private sector.

The Department is, of course, extremely supportive of the use of fossil energy, coal in particular, and outside the research and development area, is taking major steps to assist the utilization of this fuel in our economy through support of coal export activities, reexamination of the Clean Air Act, Surface Mining and Reclamation Act, the deregulation of crude oil, so as to send the proper economic signals about costs of alternative fuels. All of these efforts will assist the utilization of fossil fuel.

Another significant change within the research and development program is to recognize also that attempts to operate at very large scale—that is, large pilot plants—are in fact working on problems that are in a precursor stage to commercialization. And again, we would expect to see the private sector operative here.

So we are refocusing our program in the areas of long-range, high-risk activities which are appropriate for Government and where the incentives for private activity are not there. In this way, a true need of the system is met, which only the Government can provide.

In addition to these concepts, we also recognize the importance of holding the costs of Government under control. And so we have looked at questions of affordability. There are always more good programs that technical people can define and argue are worth doing than can be afforded. So we have identified within the subset of possible things we might do what we believe are the R. & D. programs with the most value to the country. We recognize that there are still things that are not covered by this budget that could be done; however, these were laid aside for a higher priority associated with helping this country recover its economic viability.

In connection with understanding our total budget, we have historically had a number of very large major projects with large cost tags. The President has indicated that projects of this scale should be considered by the Synthetic Fuels Corporation if they are to proceed; so that all large-scale synthetic fuels projects would be coordinated from one entity rather than partly from the Department of Energy and partly from the Synthetic Fuels Corporation. We have prepared a table—and I believe there is a copy in front of you and available to the committee—which indicates the distribution of our programs from 1979 through our present budget request. Between major projects and the technology-based program, which is the appropriate role for the Department of Energy in terms of applied development and innovative research, it shows what is really happening in our budget.

This table helps you to understand that while there might be a difference between previous requests for fiscal 1982 and this administration's request for fiscal 1982 of as much as $1 billion, in fact some $840 million of that difference is associated with the decision to direct the major projects that were previously being carried by the Department of Energy to the Synthetic Fuels Corporation for consideration.

Since there is some $17 billion available in the Synthetic Fuels Corporation, there are indeed adequate funds if any of these projects are to be selected by that entity to be carried forth. So our true R. & D. level was running, for example, at $500 million in 1979, and we see a level of $500 million in fiscal 1981.

In the recognition of fiscal stringency, we have proposed a reduction to a level of $373 million in fiscal 1982, which represents a decrease of about 25 percent from the previous level. So the actual reduction in our program is not nearly as large as might appear at first blush, and that reduction does not sacrifice any of the significant high-priority work which is part of our main-line activity.

PREPARED STATEMENT

So with these brief opening remarks, Mr. Chairman, we would be pleased to discuss with you the various aspects of our proposals.

[The statement follows:]

STATEMENT OF ROGER W. A. LEGASSIE

The Fiscal Year 1982 revised budget request for Fossil Energy has been forged from two basic principles which undergird the Administration's energy and economic policies.

First, we must take unprecedented steps to regain control of the Federal budget. Every federal government program has been examined in detail, and nearly every agency has been required to contribute to the effort to reduce growth in Federal spending. The Department of Energy is no exception.

Second is the nature and extent of the energy problems facing this nation. Our domestic policies must continue to be made within the shadow of an uncertain and increasingly expensive supply of foreign energy. Yet, it is naive to believe that the Federal government can develop and force the introduction of new technologies before the economic or regulatory climate is ready. This is not to say that we cannot allocate enough money to construct some large-scale projects, but the commercial acceptance of these technologies depends on their relative economics. We believe we can expand the development of our vast domestic resources and accelerate the commercial introduction of new and better technology by creating the proper climate for private investments and risk taking.

A key aspect of the President's energy program is to remobilize technological innovation within the private sector to bring about the expanded development and production of untapped energy resources and to foster private allocation of resources to new technologies in both the production and use of energy.

Therefore, this budget reflects a fundamentally different philosophy of the Federal government's role in the field of energy -- a philosophy which we believe improves the climate for technological innovation within the private sector, while allowing the reduction of Federal expenditures.

The system in which private funds are invested at risk with the potential for significant return has served this country well in the past. It can and should be permitted to serve in the rebuilding of our energy security.

The Federal government in turn will focus its support on that longer-term, high-risk research and development which industry has generally been less willing to undertake. Once the conceptual hurdles have been surmounted, the final scale-up and deployment of a new technology will be the responsibility of industry.

This is the foundation on which we have structured the Fossil Energy budget. The $435 million we are requesting in budget authority for Fiscal Year 1982 is money that will be spent in a tightly focused manner. Our primary mission will be reoriented to support longer-term, high-risk programs which have the potential for significant payoffs. These activities will focus on acquiring the technology base necessary for industry to develop and demonstrate hardware without the need for substantial government assistance. Near-term technical support for processes or demonstrations will be limited to cases where the government has a unique resource or facility. Demonstration and commercialization of technology will be the responsibility of industry with, in the case of synthetic fuels, the assistance of the Synthetic Fuels Corporation.

This approach, as reflected by the budget we are submitting, is one that we believe will restore a prudent balance between government and industrial R&D.

Our 1982 budget proposals will have an impact, of course, on the conduct of our program during fiscal 1981. Therefore, concurrently with the submission of a revised budget request for FY 1982, we are proposing appropriate rescissions for portions of the unspent funds in those FY 1981 programs which we are proposing be discontinued or which will be redirected. Including rescissions proposed by the past Administration, we are proposing to reduce the 1981 appropriated budget for Fossil Energy by $322 million.

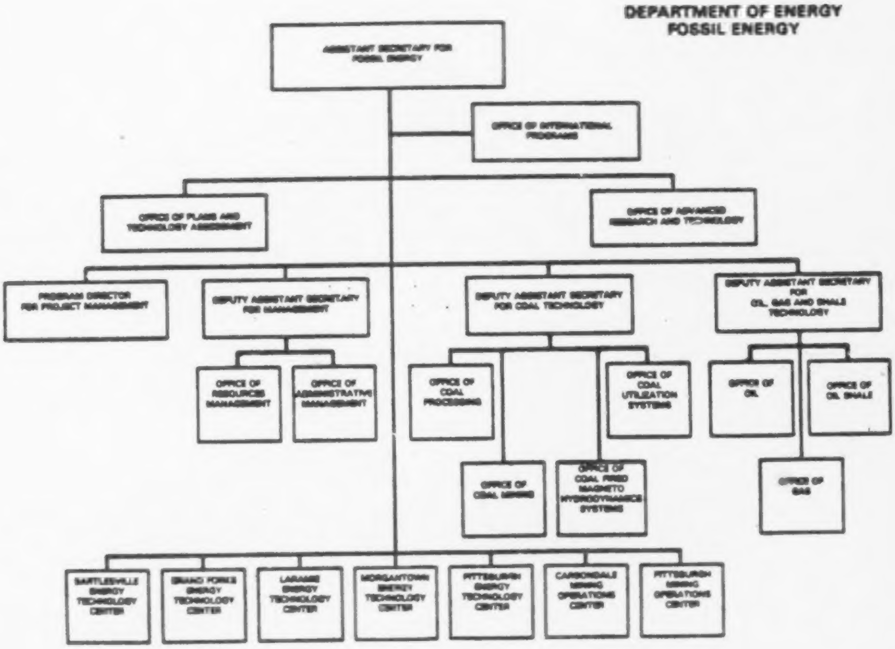
In the more detailed program descriptions that follow, we will be outlining the specific actions we propose to take in fiscal years 1981 and 1982.

In concluding this introduction, Mr. Chairman, I would like to stress one point particularly. The revised budget we are submitting for your consideration must be viewed within the overall context of the new Administration's energy policy. The reductions in Federal R&D spending must be balanced by improvements in the investment climate resulting from the Administration policies in areas such as tax and regulatory relief. Decontrol of oil prices will increase domestic exploration and discovery of new conventional petroleum resources as well as the application of improved recovery techniques. Removal of unnecessarily cumbersome permitting and regulatory policies will unshackle a coal industry that has not yet begun to approach its full potential.

By letting private firms allocate resources among technologic choices, there will be no need in the future to select which projects proposed by private industry should receive Federal support. These judgements can best be made in private markets. The risk of wrong government decisions or the attempt to balance Federal support among competitive firms will no longer be a problem.

ORGANIZATION

The organization of the Fossil Energy office, as shown in the chart below, remains essentially unchanged at the present time from our presentation last year.


DEPARTMENT OF ENERGY
FOSSIL ENERGY
ASSISTANT SECRETARY FOR FOSSIL ENERGY
OFFICE OF INTERNATIONAL PROGRAMS
OFFICE OF PLANS AND TECHNOLOGY ASSESSMENT
OFFICE OF ADVANCED RESEARCH AND TECHNOLOGY
PROGRAM DIRECTOR FOR PROJECT MANAGEMENT
DEPUTY ASSISTANT SECRETARY FOR MANAGEMENT
DEPUTY ASSISTANT SECRETARY FOR COAL TECHNOLOGY
DEPUTY ASSISTANT SECRETARY FOR OIL, GAS AND SHALE TECHNOLOGY
OFFICE OF RESOURCES MANAGEMENT
OFFICE OF ADMINISTRATIVE MANAGEMENT
OFFICE OF COAL PROCESSING
OFFICE OF COAL UTILIZATION SYSTEMS
OFFICE OF OIL
OFFICE OF OIL SHALE
OFFICE OF COAL MINING
OFFICE OF COAL FIRED MAGNETO HYDRODYNAMICS SYSTEMS
OFFICE OF GAS
BARTLESVILLE ENERGY TECHNOLOGY CENTER
GRAND FORKS ENERGY TECHNOLOGY CENTER
LARAMIE ENERGY TECHNOLOGY CENTER
MORGANTOWN ENERGY TECHNOLOGY CENTER
PITTSBURGH ENERGY TECHNOLOGY CENTER
CARBONDALE MINING OPERATIONS CENTER
PITTSBURGH MINING OPERATIONS CENTER

As the committee is aware, however, Energy Secretary Edwards announced on February 25 a realignment of the Department to improve management and to reflect a decreased emphasis on regulation and commercialization activities.

A key part of this realignment is the transfer to Fossil Energy of several functions previously conducted by the Office of Resource Applications. Specifically, programs involving coal resource management, oil, natural gas, oil shale, leasing policy, and the interim Alternative Fuels activities will be integrated into the Fossil Energy organization. We will be pleased to report to the Committee specifically on this reorganization within Fossil Energy as soon as the details are in place.

The policy of decentralizing Fossil Energy project management to the field has been successful and is expected to continue. Two distinct functional roles, therefore, are delineated with the Fossil Energy organization: (1) Headquarters is responsible for formulating overall policy and programs; while (2) field organizations, including DOE's Energy Technology Centers, Operations Offices and national laboratories, are responsible for implementing fossil projects and technology base activities.

COAL PROGRAM

More than any other fuel resource, the coal beneath the U.S. is evidence of America's vast energy wealth. Conservative estimates place the total amount at nearly 4 trillion tons. Approximately 2.23 trillion tons are estimated undiscovered resources, and 1.74 trillion tons are identified resources. Included in the latter are about 438 billion tons which are readily mineable by today's methods -- enough to take us well into the 22nd Century. In terms of energy content, the coal we know can be mined is equivalent to almost 10 times the recoverable supplies of oil in Saudi Arabia.

Underground mining could be used for nearly 297 billion tons of the Nation's coal reserve, while an estimated 141 billion tons could be mined by surface methods. The amount of coal that can be recovered from the reserve base, however, varies from area to area. It ranges from less than 50 percent in some underground mines to more than 90 percent at some surface mines. Even subtracting the coal that must be left untouched to form roof-supporting pillars, or that runs through folded, faulted or interlayered rock strata, or that underlies towns and cities, an estimated 219 billion tons of coal can be recovered -- still the largest recoverable coal reserve base in the world.

In 1980, driven by its favorable economics in the face of escalating world oil prices, U.S. coal production topped 835 million tons -- the most ever and 60 million tons more than 1979. Still, the turn toward coal can be accelerated even more, particularly if utilities can acquire the necessary capital to make the necessary equipment modifications and if unnecessary regulatory obstacles can be removed. Coal industry analysts estimate that the capacity exists to mine at least another 100 million tons annually without major strains on its current productive capacity. Industrial ingenuity will make it possible to use more coal and still preserve our environmental goals. Such technology exists today and even better, more efficient technologies are on the commercial horizon.

With the Administration's removal of price controls on petroleum and the continuing trend towards further natural gas deregulation, the economics of producing and using more coal are improving within the private sector. Therefore, the Federal coal technology program has been refocused to support longer term, high-risk research and development.

We are also focusing both attention and funding within our coal program on the environmental issues associated with increases in coal burning, particularly in the areas of acid rain and carbon dioxide. Presently, for example, it is uncertain what benefits might accrue from any particular strategy to reduce acid precipitation, and DOE is working cooperatively with other groups within both the Department and the Environmental Protection Agency to develop a better understanding of the origins, transport and effects of coal-based pollutants.

The Administration is requesting $381 million in budget authority to carry out coal research and development programs in FY 1982. This represents a reduction of $1.084 billion from the budget submitted by the previous Administration on January 15, 1981, with the major part of the reduction resulting from the restructuring of the Federal government's synthetic fuels program. Concurrently with the revised FY 1982 budget request, the Administration is requesting that $309 million be rescinded in FY 1981 (including $25.5 million in proposed rescissions proposed by the Carter Administration budget on January 15, 1981), thereby reducing the FY 1981 appropriated amount to $735 million.

The following describes briefly the refocused approach applied to each of the activities within the coal technology program.

MINING RESEARCH AND DEVELOPMENT

(BA in Millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$ 59.3	$ 49.5	$ 32.8	$ 41.5	$ 21.8

To improve coal's economic attractiveness, the Department's mining R&D program will focus on these objectives: an increase in the efficiency of labor and capital for the entire coal mine operation; and the improvement of mining technologies which can be applied to currently uneconomical, inaccessible or underused coals. Research is conducted on both a contract and an in-house basis, making full use of the Department's unique laboratory and test facilities.

Underground Mining

Within the overall mining R&D budget, the Department is requesting that $15 million be allocated to underground coal mining in FY 1982. Major components include (1) mine planning, (2) production, and (3) in-mine transportation.

The selling price of coal is affected directly by the speed with which a mine can be developed, openings cut, and access reached to the coal seam -- each of which can be streamlined by proper mine planning. Mine planning can also assure the health and safety of miners and a reduction in environmental degradation by identifying potential concerns early and then developing the mine in a manner that mitigates the concerns.

In FY 1982, DOE's mine planning activities will continue to develop a technologic data base on major health, safety and environmental concerns. Attention will be focused on improving the mine operator's ability to predict and control gases and fluids encountered in the mine, as well as the evaluation of ground subsidence, techniques to dispose of mine waste, and control of mine effluents.

Underground coal production in the U.S. relies on two principal mine designs: (1) room-and-pillar, which accounts for nearly 95 percent of the Nation's underground mining, and (2) longwall mining, which makes up the remaining 5 percent. In FY 1981, a machine which combines both mining and roof bolting for room-and-pillar operations began its first field trials in Pennsylvania, and a high capacity longwall conveyor was tested in northern West Virginia. In FY 1982, trials will continue on longwall techniques which can be applied to inclined seams representative of many in the East and Midwest and to the thick seams found in the West. Trials will be completed on a prototype longwall shearer control subsystem, a necessary component for mine automation.

The budget level requested for in-mine transport in FY 1982 will permit an underground demonstration of a prototype for an automated rail haulage system.

The Mining Equipment Test Facility at Bruceton, Pa., will be operated at a reduced level to support the underground mining program.

Surface Mining

The surface mining program is also being reoriented to focus on longer-term R&D, and therefore no new funding is requested for FY 1982. Efforts will be directed at completing or phasing out projects with near-term benefits. Since many of the projects are initiated by private companies and since the improvements in productivity would accrue to the individual companies, industry has sufficient incentives to pursue this kind of technology development without continued Federal involvement.

Coal Preparation

The Department is requesting $6 million for its coal preparation program in FY 1982. Coal cleaning is a critical link between the mining and use of coal. While coal cleaning is logistically part of the mining operation, its specific requirements are determined by end use, whether as steam coal, metallurgical coal, or synfuel feedstock.

DOE's coal preparation program includes advanced development of physical processes, in which mineral-bound impurities are separated by their different densities or by magnetic properties, and limited exploratory work on chemical processes, which achieve a much higher degree of coal cleaning including the removal of organically bound sulfur as well as very finely dispersed inorganically combined sulfur. Attention is also given to cost-intensive ancillary operations, such as grinding and and dewatering.

In FY 1982, activities will focus on tests to establish the most cost-effective processes for cleaning selected Appalachian coals to various quality levels. Economic and technical analyses will be undertaken to evaluate the economics of various coal preparation techniques in relation to specific user conditions, such as coal source, location, plant operating requirements, operational cost sensitivitives, environmental regulations, and coal cleaning degree.

Capital Equipment

The $800,000 requested will permit acquisition of specific coal cleaning and analytical equipment, rock mechanics instrumentation for use in subsidence and ground control research; and general test equipment related to the Mining Equipment Test Facility.

The Administration is also requesting an $8 million rescission in the FY 1981 Mining R&D program, appropriated at a level of $49.5 million. The rescission would include $3.0 million from the underground mining budget, $3 million from the surface mining budget, and $2 million from the coal preparation budget.

LIQUEFACTION

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$248.9	$521.4	$887.0	$353.9	$105.9

With the recent creation of the Synthetic Fuels Corporation (SFC), the DOE coal liquefaction technology program will be reconfigured to support a number of processes in parallel from the laboratory stage through process development units. Responsibility for demonstration activities will be shifted to the SFC. This is consistent with the Administration's policy to focus the Federal role on long-range research and development while relying on private market forces, with the financial help of the SFC, to set the pace for the introduction of synfuel technologies into the marketplace.

Within the guidelines of this new policy, the Department will complete ongoing operations in FY 1982 at the H-Coal Pilot Plant (FY 1982 request: $20 million) in Catlettsburg, Kentucky. Since last summer, we have made significant progress in overcoming many of the equipment problems encountered during start-up, and the plant has now completed its first long-term continuous operation (45 and one-half days). The plant is currently converting 200 tons per day of Illinois #6 coal into synthetic crude oil suitable for refining. Current plans are to begin processing a sub-bituminous coal in the same mode later this year and then change to the production of boiler fuel at a coal feed rate of 600 tons per day. These test runs will be completed in FY 1982, and no further Federal support for plant operations is planned. If appropriate, DOE will undertake discussions with the project's industrial participants, or possibly other interested firms, should they wish to continue privately-funded operations to support their own commercialization plans.

The FY 1982 request for the Exxon Donor Solvent Pilot Plant ($30 million) will continue the testing program using a limited range of coals. The 250 ton-per-day plant near Baytown, Texas, has been undergoing full testing operations on Illinois #6 coal since January, following a successful start-up last summer. The plant has accumulated more than 3000 hours of coal processing time. Since the FY 1982 request represents a decrease in the Government's commitment, the funding level has been presented to the Sponsors Management Committee (in accordance with the cooperative agreement) for their decision regarding further use or disposition of the facility. We have scheduled a second meeting for May 15 to review these options. Further operation of the facility following FY 1982, if the private participants determine it appropriate, would be financed from private funds.

DOE will also continue efforts in FY 1982 to improve indirect liquefaction technology (FY 1982 request: $14 million). While current processes exist for indirect liquefaction -- where coal is first converted into a mixture of gases, then the gases recombined to form liquids -- the potential and need exists for improving efficiencies, costs, and the capability of meeting U.S. market requirements. Catalyst and process R&D currently underway will be continued in FY 1982, emphasizing improved product selectivity, integration with advanced gasifiers, and reduced thermal losses. Operations will begin at an internationally-sponsored, 100-barrel per day methanol-to-gasoline pilot plant in the Federal Republic of Germany that will test a more efficient version of the M-gasoline process. The revamping of a liquid phase synthesis gas conversion process development unit at La Porte, Texas, will be completed in FY 1982.

The refocused liquefaction program will continue efforts to develop long-term, high-risk third generation technologies (FY 82 request: $18.3 million). Such techniques include the testing of natural and synthetic catalysts, improved integration liquefaction and upgrading systems in multi-step processes, improved methods for the pyrolysis of coal, and other technology base activities. A common characteristic of these techniques is an increase in the efficiency of hydrogen use which can be valuable in reducing the synthetic gas costs.

DOE will also continue support studies/engineering evaluations (FY 1982 request: $10.6 million) which involve environmental and toxicology R&D, the coordination of environmental data among liquefaction processes, engineering assessments, independent technical reviews, and evaluations of ancillary processes such as hydrogen generation. Much of the environmental-related work is done in cooperation with research efforts conducted by the Department's former Office of Environment and recently shifted to the Office of Energy Research. Funding from this category is also allocated for maintenance of unused liquefaction facilities currently awaiting re-use or disposal.

The major change from the January budget submission is reflected in the liquefaction demonstration plants category (FY 1982 request: $12.3 million in operating expenses, no funding for construction). In 1978, DOE began a program to design, construct and operate single modules of a full-size commercial plant that would demonstrate two variations of the Solvent-Refined-Coal process. Preliminary designs have been completed for both plants, and detailed process designs are now underway.

The Administration recommends that funding for major synthetic fuel construction projects be focused in the Synthetic Fuels Corporation which will be asked to support construction of the plants. Authority to conduct less-than-full scale technical demonstrations is contained within the Energy Security Act of 1980 which created the independent Corporation.

During FY 1981, the Administration is requesting a rescission of construction funds ($157.5 million) appropriated for the SRC-I demonstration plant proposed for Newman, Kentucky. Process design will continue until Congress acts on the rescission request. Should Congress concur in the decision, the project would be terminated on or before the end of FY 1981. This however does not preclude the industrial partners from pursuing the demonstration and commercialization of this technology with funding solely from the private sector, nor applying for financial assistance from the Synthetic Fuels Corporation.

The Administration has recognized the unique international nature of the SRC-II demonstration plant planned for Morgantown, West Virginia. In July 1980, the U.S. signed agreements with the governments of the Federal Republic of Germany and Japan who, with their industrial partners, have proposed to fund half of the current estimated cost of the project. As the Chairman is aware, we have received updated cost estimates for the project from our contractor and have made them publicly available while we continue our analysis of the data. Initial consultations have been held (April 14-15) to determine if the international participants consider it mutually beneficial to continue this project with the potential support of the Synthetic Fuels Corporation. A second trilateral meeting is scheduled for June 4-5 at which time we anticipate that the necessary decisions will be made regarding the future course of this project. Our FY 1981 budget, which includes a deferral of a portion of the $170 million in project construction funds, is therefore structured to ensure that adequate time is provided for a mutual decision to be reached by all participants as required by the international agreement.

The $12.3 million budget request for operating expenses in FY 1982 will support the continued operation of the SRC pilot plant at Ft. Lewis, Washington, should the SRC-II demonstration project move forward under the aegis of the Synthetic Fuels Corporation. In the absence of joint support associated with the demonstration plant, the funds could be used to redirect the SRC pilot plant efforts to long-term research and development.

DOE is also requesting FY 1982 funding for capital equipment (FY 1982 request: $700,000) to provide for laboratory and other equipment for use at the Energy Technology Centers and National Laboratories in support of the liquefaction program.

In addition to the $157.5 million rescission request for the SRC-I demonstration project, the Administration is requesting a $6 million rescission in the indirect liquefaction category in FY 1981. Included in this rescission would be $3 million for the feasibility study of the W.R. Grace coal-to-gasoline plant proposed for Baskett, Ky. Rescission of the funding would leave $3 million in FY 1981 to continue conceptual design of the full-scale plant. Support for this commercial project must come from private sources or from the SFC where it would compete with other proposals for commercial coal-to-gasoline plants. DOE plans no future financial participation in the project. Also, $3 million is proposed to be rescinded from the $12 million appropriated in FY 1981 for environmental studies and other support, and $1 million is proposed for rescission from the $47 million appropriated for the SRC pilot plant operations.

SURFACE COAL GASIFICATION

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$113.3	$159.9*	$216.9	$65.5	$54.0

*Includes a proposed rescission of $5.0 million for a preliminary design study of a demonstration project based on the HYGAS technology.

In similar fashion to the liquefaction program, the surface gasification technology efforts have been refocused to emphasize long-range, high-risk technology. Major demonstration plants supported previously under this budget category will now be proposed for consideration by the Synthetic Fuels Corporation.

The FY 1982 budget request will permit sufficient funds to complete a recently-begun evaluation of the future role of the BiGas Pilot Plant (FY 1982 request: $1.1 million) and to place the facility on standby status.

The FY 1982 budget request contains no specific funding for the peat gasification program. Studies are currently ongoing in 10 states to determine the amount and location of fuel grade peat. The technical feasibility of peat gasification has been demonstrated at the bench scale and process development unit scales with peats which realistically bracket the types expected to be found throughout the U.S. Bench scale testing of peat dewatering technology will be completed in FY 1981, and several studies are being continued this year on peat gasifiers at several levels of capacity. The information generated by these efforts will enable a broad technology data base to be established for use by private firms wishing to pursue peat gasification, therefore no funds are requested specifically to support the production of high-Btu gas from peat. DOE is also proposing a rescission of $5 million from the $13 million appropriated in 1981 which will terminate ongoing efforts to convert the HYGAS pilot plant to utilize peat as a feedstock.

We will continue several peat-related efforts, however, including harvesting and dewatering studies, environmental assessments, and combustion tests with new technologies such as atmospheric fluidized bed.

Within the FY 1982 surface gasification budget request, funding will be provided for continued operation of technologies for low/medium-Btu gasification (FY 1982 request: $13.2 million). Included in this category is the operation of two configurations of fixed bed gasifiers to produce low/medium-Btu gas for studies of various clean-up and end use systems, a fluidized bed gasifier to test process performance and other factors, and an entrained bed gasifier which will complete its testing program in FY 1982.

Third generation processes (FY 1982 request: $27.1 million) comprise the largest funding category in the refocused surface gasification program. Work will continue on gasifiers which produce substantially all methane within the gasifier -- as compared to currently available gasifiers which require the gas exiting the gasifier to be upgraded to form methane. In FY 1982, data from the 3/4 ton-per-hour hydrogasifier in Canoga Park, Calif. will be analyzed to determine future Government support for this technology.

DOE will continue to participate in the operation of the 1 ton-per-day catalytic gasification process development unit at Baytown, Texas, to improve the data base for several U.S. coals. The continued involvement at this level is expected to complement a redirected program announced by Exxon in 1980 in which the company intends to build a 100-ton per day privately-funded pilot plant in Europe. As part of a cooperative agreement negotiated between DOE and Exxon, the Department will have access to data generated by the pilot plant on two U.S. coals previously studied in the Baytown unit.

In addition to these efforts, DOE will continue work on a high rate entrained flow gasifier, and on those projects that offer the potential for significant advances in components, materials, and instrumentation that would increase the operational efficiency and reliability of coal gasification processes.

The FY 1982 funding level for technical support (FY 1982 request: $12 million) will continue many crosscutting studies and engineering evaluations, environmental analyses and comparisons of pilot plant data, continued development of a gasification data book, and independent evaluations of competing advanced gasification processes.

As part of the restructuring of the Federal synthetic fuels program, the DOE gasification demonstration program will be discontinued and FY 1981 funding will be proposed for rescission. The sponsors of some of the projects currently in the program may decide to submit proposals to receive Synthetic Fuels Corporation support either as synthetic fuel projects or as synthetic fuel modules.

The Conoco Coal Development Company and the Illinois Coal Gasification Group, both selected in 1977 to design high-Btu pipeline gas demonstration plants, will complete their designs this summer. The Administration does not support DOE funding to construct a demonstration plant at the completion of the designs. Sufficient funding is available from prior years to essentially complete the designs; therefore the Department proposes to rescind the $44 million appropriated for FY 1981. Carryover funds from past years will also be used to continue final design work through FY 1981 for a joint project with the City of Memphis to design, build and operate a medium-Btu fuel gas demonstration plant. At the end of this fiscal year, the Administration proposes to conclude direct DOE support for the project. FY 1981 funds ($45.4 million) will be proposed for rescission. The project sponsor has proposed continuing the project under incentives provided by the Synthetic Fuels Corporation.

The Department is requesting for FY 1982 funding for capital equipment (FY 1982 request: $550,000) to provide new or replacement equipment at the Energy Technology Centers and National Laboratories involved in the gasification program. Such equipment includes both analytical and general purpose equipment.

In addition to the rescissions outlined above, DOE is also requesting that $5 million appropriated in FY 1981 for a conceptual design of a HYGAS demonstration plant be rescinded.

IN SITU COAL GASIFICATION

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$10.0	$10.0	$10.8	$10.0	$8.6

Today, much of the Nation's vast coal resource is not technically or economically recoverable by conventional underground or surface mining. Gasifying the coal underground, without mining, could significantly increase our recoverable coal supplies. Once the synthetic gas is piped to the surface, it can be used as boiler fuel, upgraded for transport, or converted into transportation fuels such as methanol and gasoline. The technology is amenable to small-scale (3,000-10,000 barrel per day) production of liquid transportation fuels for use locally or regionally.

During the past six years, successful field tests have produced both low Btu and medium Btu gases. One recent test completed in the fall of 1979 produced a medium Btu gas for a 55-day period at a rate sufficient to have produced up to 3,300 gallons of gasoline per day.

Within the FY 1982 budget request, funding will be provided for tests to determine the feasibility of gasifying coal in a 600-foot deep, 47-foot thick seam near Centralia, Washington. In addition, work with Gulf Research and Development Company to study the gasification of steeply-dipping coal beds will enter its last year with an expected 90-day test burn designed to produce medium-Btu gas.

Funding would also be provided for environmental studies, including the monitoring of ground water at the sites of past tests, the prediction and mitigation of subsidence, and permitting activities in conjunction with the Centralia, Washington activity.

Several small studies focused primarily on basic issues impeding the progress of underground coal gasification will also be conducted by university researchers and industrial groups. Under the reduced funding level from the January 15 budget request, a planned cooperative program with the Gas Research Institute will not begin in FY 1982.

ADVANCED RESEARCH AND TECHNOLOGY DEVELOPMENT

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$ 56.2	$58.3	$72.6	$58.3	$67.6

Consistent with the refocused Federal energy policy, the Advanced Research and Technology Development activity plays an important role in the Department's Fossil Energy program by developing a sound technology base for coal processes. Through applied and exploratory high risk, potentially high payoff research at DOE's field centers and at universities and industrial laboratories, this activity provides ideas for new processes, improves the fundamental understanding of coal characteristics and reactions, and holds the potential for significant improvements or breakthroughs in the use of coal.

In FY 1982, more emphasis will be placed on developing a better fundamental understanding of the transformation coal undergoes in fossil energy technologies. Process research in coal liquefaction will focus on basic coal conversion concepts and exploratory liquefaction processes that may lead to novel and more efficient technologies. Process research in coal gasification will center on the development of innovative gasification concepts through improved understanding of the basic chemical processes involved, and the development of improved gas stream treatment, and processing.

Direct utilization research will support an expanded effort in fundamental coal and synfuel combustion and generic heat exchanger technology. Modeling procedures and data base development will also be emphasized. These efforts will also provide for preliminary, small-scale investigations of novel combustors and coal-based fuels aimed at retrofit of oil-designed boilers and process heaters for direct coal utilization.

All advanced fossil energy processes and utilization systems require a strong supporting research program in materials and components. Materials research will be directed at developing a basic understanding of the phenomena of materials performance on a micro- and macroscopic scale. Component research will focus on investigations of unique speculative component designs which have the potential for dramatically increased efficiency and life.

The University Coal Research program will continue to insure the influx of new ideas from the Nation's universities while encouraging faculty and students to enter the field of coal technology.

Two major new thrusts will begin in advanced research in FY 1982. Instrumentation and control research will be aimed at developing new instruments capable of functions in the harsh environments of many coal processes. This work will establish the foundation for advanced generic control systems. Technology base synthesis will provide for the coordinated development of advanced research plans and for the seed funding of very long term and fundamental projects as well as high-risk/high-payoff fossil energy initiatives.

The Advanced Research and Technology Development activity also provides for construction at the Energy Technology Centers. Under the proposed funding level, we will complete the design of a program support building at the Pittsburgh Energy Technology Center, however, an assessment will be required to determine whether construction can begin.

ADVANCED ENVIRONMENTAL CONTROL TECHNOLOGY

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$38.3	$37.5	$37.8	$34.5	$26.9

Nearly 90 percent of the coal consumed in this country is, and will continue to be, burned directly. Therefore, a primary objective in expanding the use of coal to decrease our over-dependence on foreign oil is to assure that coal can continue to be burned within environmental standards. Sulfur, nitrogen, alkali and halogen compounds, and volatile trace metals are found in varying amounts in coal and are released during the combustion and conversion processes. Besides having harmful effects on health and the environment, these substances can also degrade the performance of key components in energy conversion systems such as turbines and fuel cells.

DOE's Advanced Environmental Control Technology program encompasses three major areas of combustion gas cleanup: (1) flue gas cleanup systems which remove contaminants from the stack gases of conventional combustion systems and (2) gas stream cleanup systems which remove contaminants from the gas produced by coal gasifiers or pressurized fluidized bed combustors before it is used in gas turbines or fuel cells, and (3) clean-up base technology.

The flue gas cleanup activity (FY 1982 request: $6.5 million) will move away from direct participation in near-term lime/limestone scrubber refinement and advanced flue gas desulfurization, both of which are receiving increased private sector emphasis. (A rescission is being proposed for $3 million of the $9 million appropriated in FY 1981 for advanced flue gas desulfurization.) Instead, the research program will extend flue gas technology beyond sulfur cleanup to combined or integrated systems for removal of sulfur oxides, nitrogen oxides and particulates. New filtering techniques for ultrafine particulates will focus on improving efficiency and the ability to operate at higher temperatures. Applied research will also begin on advanced pollutant removal concepts involving the use of electron beams, lasers, or plasma-jets.

As the economic advantages increase for combined cycle systems powered either by a coal gasifier or pressurized fluidized bed combustor, the need is heightened for efficient gas stream cleanup (FY 1982 budget request: $14.4 million) system. Particularly important will be the development of systems capable of operating in the high temperature and pressure environment typical of the gases exiting a coal gasifier or pressurized fluidized bed combustor. These hot gas streams contain contaminants that, if not removed, will erode or corrode downstream equipment or violate environmental emission standards. DOE's program in FY 1982 will concentrate on completing bench scale testing of various particulate removal concepts. The most promising ones will be scaled up and tested at the process development unit scale.

As part of the gas stream cleanup category, DOE will also continue work to determine contaminant effects on fuel cell performance. The studies are expected to lead to a decision as to the desirability of continuing high temperature, clean-up process work.

Also within the gas stream cleanup program is an effort to determine the effectiveness of modifying the combustion or gasification process itself to suppress or remove pollutants. A major effort will be focused on the Limestone Injected Multi-Stage Burner (LIMB), a joint EPA/DOE effort which mates low nitrogen oxide burner technology with the injection of limestone to capture sulfur dioxide. This concept could provide an environmentally viable approach to retrofitting existing coal-fired boilers to reduce these emissions. Research and development of this concept will be completed in FY 1981.

The clean-up base technology program (FY 1982 request: $5.5 million) involves waste management, applied research and advanced instruentation, as well as technical and economic comparisons on common aspects of flue gas and gas stream clean-up technology. Specifically in FY 1982, DOE's efforts in waste management will continue the development of new techniques for disposing and/or using solid and slurry wastes from clean-up processes; efforts with the Department of Agriculture to determine if spent limestone from fluidized bed combustion might serve as a replacement for increasingly expensive lime for eastern U.S. crops; and several other activities involving wastes associated with combined flue gas cleanup systems currently under consideration.

Instrumentation development will concentrate on improved systems that continuously monitor sulfur dioxide and measuring techniques for determining how the concentration of sulfur, nitrogen, alkali metals, and other contaminants changes during the energy production process.

COMBUSTION SYSTEMS

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$50.9	$36.0*	$76.7	$36.0	$38.8

*Reflects $20.5 million in rescissions proposed in the Carter Budget for coal-oil mixtures ($17.5 million) and the Rivesville 30 MWe atmospheric fluidized bed boiler ($3.0 million).

A significant opportunity exists for the increased use of coal in the utility, industrial and commercial sectors, large proportions of which currently rely on increasingly expensive oil and natural gas.

To assist the private sector in developing combustion options, the Department's program involve (1) the fluidized bed combustion of all ranks and grades of coals and (2) the substitution of coal or coal-derived fuels for a substantial portion of the oil burned in existing oil-fired combustors.

Significant results have been achieved in the combustion program, particularly in moving the atmospheric fluidized bed combustion (FY 1982 request: $11.3 million) to the threshold of commercial acceptance. The 100,000 pound/hour fluidized bed boiler on the campus of Georgetown University has now passed its second winter of service. In FY 1982, the Georgetown unit will be joined in operation by units of different configurations at the Great Lakes Naval Training Center near Chicago and at Shamokin, Pennsylvania. Because results from the Shamokin project, which is designed specifically to burn anthracite wastes, will available substantially earlier than from a previously-planned second anthracite boiler proposed for Wilkes-Barre, Pa. DOE support for the Wilkes-Barre project will be terminated at the completion of the design and no construction funds are being requested in FY 1982.

DOE will also place the 30 MW atmospheric fluidized bed boiler at Rivesville, West Virginia on "mothball" status until funds are available to begin the required dismantling. Despite problems encountered in the operation of this pioneering facility, the Rivesville unit achieved many of its design goals including a 200-hour continuous test run in 1979. The technology for atmospheric fluidized bed utility applications has now advanced beyond that which can be effectively supported by continuing operations at Rivesville. A $3 million rescission, therefore, is proposed in FY 1981 for the Rivesville project.

DOE will also begin an expanded effort in FY 1982 to design advanced fluidized bed systems, possibly including such concepts as circulating beds, staged combustion, and combinations of fluidized bed gasifiers and char combustors. Advanced concepts can be evaluated at the newly planned Fluidized Bed Combustion Research Facility in Morgantown, West Virginia.

DOE's primary effort in fluidized bed combustion in FY 1982 will be the continued development of the pressurized fluidized bed combustion (FY 1982 request: $17 million) technology which the combustor is pressurized from 6 to 16 times atmospheric pressure. This increases the efficiency of power generation by permitting the combustor to be used in a combined-cycle arrangement, while also increasing the sulfur capture within the boiler. The major portion of the funding in this category would be allocated for continued construction of the 13 MW PFB combined cycle pilot plant at Wood-Ridge, New Jersey.

Construction is now scheduled for completion in the second quarter of FY 1983.

Sufficient data should be available from the Wood-Ridge pilot plant to support technology development of the pressurized fluidized bed system in the U.S. Therefore, DOE is not requesting funds to conduct test efforts at the International Energy Agency PFB test facility located in Grimethorpe, England, and will initiate consultations with the United Kingdom and the Federal Republic of Germany regarding appropriate actions to withdraw from the IEA joint program following Congressional approval of this action.

Funding is being requested for the initial design effort of alternate turbine machinery for testing of a U.S. type gas turbine at the Wood-Ridge PFB pilot plant and for the investigation of advanced coal combustor concepts, such as staged slagging combustors.

Funding in the advanced combustion technology program (FY 1982 request: $4.1 million) will focus on new coal combustor concepts for oil-designed utility and industrial boilers and furnaces. A competitive solicitation to begin this effort will be issued in late FY 1981. In addition, this funding would be used for various economic evaluations along with technical feasibility and equipment reliability studies related to advanced combustion systems. Environmental analyses and component development associated with ongoing combustion projects will also be conducted.

With private sector involvement expanding in the preparation and use of coal-oil mixtures, DOE's alternative fuel utilization program (FY 1982 request: $6.4 million) is shifting its emphasis to yet-unproven concepts with significant potential for replacing oil or gas with coal. We concur in the rescission request of $17.45 million in FY 1981 funding for coal-oil mixture demonstration already pending from the January 15 budget request. Efforts will now concentrate on the preparation and combustion of other coal based fuel mixtures, such as coal-water, peat-coal-oil, methanol-coal, and ethanol-coal.

HEAT ENGINES AND HEAT RECOVERY

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$50.5	$36.4	$29.5	$31.4	$16.1

By advancing the state-of-the-art, the heat engines and heat recovery program can potentially result in savings in fuel consumption in: (1) central power systems, where DOE estimates that high-efficiency systems will be ready for commercial deployment by the private sector in the 1990-2000 timeframe; (2) dispersed power systems, where more efficient fuel utilization technology for industrial and residential/commercial applications could be available by 1985-2000, and (3) the recovery of waste heat from utility, residential/commercial, or industrial applications.

In the central power systems activity (FY 1982 request: $9.1 million), DOE will concentrate on open-cycle high temperature turbine technology. Temperature goals are in the range of 2600 to 3000 degrees F, a level required to offset energy losses in gasifying and cleaning the coal. The funding level will continue the program begun in 1977 in which four contractors completed Phase I (Program And System Definition Studies), and two were chosen for Phase II (Technology Testing). Phase II will be completed in FY 1981, and current plans are for a single design to be selected for Phase III (Verification Testing). The High Temperature Turbine Technology program has been stretched from the orginally estimated six years to the present schedule for completion in ten years.

The dispersed power systems activity (FY 1982 request: $6.5 million) will continue to support development of stationary diesels and gas turbines specifically tailored to burn coal-derived fuels instead of conventional petroleum. Funding would be used for projects in gas turbine low nitrogen oxide combustors and ceramic coatings, both critical areas for attaining acceptable environmental performance and durability. A rescission of $3.0 million for directly fired heat cycles is being requested for FY 1981, which will leave $2.6 million to continue a reduced effort.

No additional funding is requested in FY 1982 for the heat recovery component technology activity. Feasibility studies on the implementation of heat recovery technology at DOE's uranium enrichment plants will be completed in FY 1982. The proposed rescission of $2 million from the $4.3 million appropriated to the Fossil Energy office in FY 1981 for this activity would still provide sufficient funds to complete these initial design efforts.

FUEL CELLS

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$26.5	$32.0	$28.6	$32.0	$28.6

Fuel cells offer and electrochemical approach to energy conversion with the potential of efficiencies well beyond combustion based technology and with little to no environmental impact. The high efficiency of fuel cell power plants at full or modular scales, the negligible environmental intrusion, and the ability to operate using a wide range of hydrocarbons make fuel cells attractive for a variety of applications. If economic targets can be met, fuel cells could find significant use in electric utility applications, industrial cogeneration, and for on-site total energy systems where the utilization efficiency can exceed 80 percent.

DOE's fuel cell program has been shaped as part of a mission-oriented program coordinated by the National Fuel Cell Coordinating Group, an organization made up of government, manufacturer and user representatives who share the costs of the national fuel cell program.

In FY 1981, field tests of a 4.8 megawatt prototype fuel cell utility power plant sited on Manhattan Island will begin. Field testing of the 40 KW on-site phosphoric acid system will also be continued in FY 1982. With these tests underway, current fuel cell efforts by DOE are being devoted to the higher-risk R&D activities necessary to increase power density and reliability.

The phosphoric acid systems development activity (FY 1982 request: $10.1 million) will concentrate on technology development in support of two electric utility powerplant designs (a 10 MW and a 7.5 MW air cooled design), on the development of competitive technical concepts for the key components of the on-site integrated energy systems powerplant ranging in size from 40 KW to 120 KW, and on supporting technology base activities.

The molten carbonate systems development activity (FY 1982 request: $14.1 million) will complete the transition begun in FY 1979 from an applied research program to an effort that is primarily cell and stack technology development. Tests of the first sheet metal cells -- the first of a type suitable for potential economic viability — will continue in FY 1982. In addition, testing will continue on electrolyte structures made by methods suitable to low cost mass production.

The advanced concepts activity (FY 1982 request: $4.4 million) will continue development of solid oxide fuel cells and thermionic energy conversion.

MAGNETOHYDRODYNAMICS

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$79.0	$67.0	$60.0	$61.0	$ 0

The Administration is recommending to the Congress that all program activities in magnetoydrodynamics (MHD) power development be discontinued at the conclusion of FY 1981. MHD is a long-range technology whose potential payoffs do not justify its substantial development costs, particularly in the context of a tight fiscal climate. Initial tests will be conducted in FY 1981 at the recently-completed Component Development and Integration Facility in Butte, Montana, and the Coal Fired Flow Facility at Tullahoma, Tennessee. Following these tests, the facilities will be closed and other ongoing research and development efforts will be brought to an orderly conclusion. A rescission of $6 million from FY 1981 funds is also requested.

PETROLEUM PROGRAM

The Department's Petroleum technology program has been fashioned within the context of oil price decontrol. There is no question that the petroleum industry has the technical and financial resources to continue development of new petroleum technologies. Elimination of artificially low domestic oil prices, which have discouraged exploration and production and hindered the commercial development of new technology, will increase markedly private sector initiatives in the development of improved petroleum production techniques.

The Federal program, therefore, has continued its shift toward the development of the longer-term, higher-risk technologies which are not being pursued significantly today by private industry.

At least two out of every three barrels of oil discovered in the U.S. remains unrecoverable by conventional production technology. This amounts to more than 330 billion barrels left in the ground. Tar sands may contain some three to six billion barrels of oil that can be recovered from a resource of almost 36 billion barrels. The Nation's abundant western oil shales have the potential for contributing up to 600 billion barrels to our domestic oil supply, and additional shale oil may be recovered from the leaner shales in the East.

DOE's petroleum technology program encompasses three major activities designed to develop new and improved techniques to recover significant portions of these untapped petroleum resources and to expand the technology base for upgrading the petroleum products for transportation fuels. The three areas are: (1) enhanced oil recovery, (2) oil shale R&D, and (3) advanced process technology.

ENHANCED OIL RECOVERY

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$23.1	$18.6	$23.9	$16.6	$20.9

DOE is assisting the development of technologies for recovering petroleum from (1) heavy oil, (2) light oil, and (3) tar sand resources. In addition, the Department is conducting analyses of selected projects initiated under the Economic Regulatory Administration's tertiary incentives test program. This program demonstrates the effectiveness of price incentives. More than 300 enhanced oil recovery projects, many using advanced technology, are planned by industry under this program. The increased taxes which will be paid on the incremental production may produce more revenues than the program's cost.

Within the heavy oil activity (FY 1982 request $7.1 million), work will continue to improve the recovery efficiency of thermal processes, such as steam injection. Improving this efficiency from the current 50 percent to a 60 percent level would add two to three billion barrels of oil to domestic reserves. In addition, DOE is continuing efforts to tap deeper heavy oil reservoirs by developing technologies that allow steam to be injected to as much as twice the approximate 2500-foot depth limit of conventional systems. In Project Deepsteam, engineers are developing a steam generator that can be lowered into the borehole. Surface tests of a prototype were completed last year, and in 1981 the first downhole tests will begin. In FY 1982, an 8-12 month test of the Sandia Laboratory-developed downhole steam generator will be undertaken to determine reliability, performance, and the frequency required for maintenance.

Development of new, low-cost materials for insulating the well casing is planned for FY 1982. Reducing heat losses in deep wellbores could increase domestic oil reserves by one to two billion barrels.

The FY 1982 funding request also reflects a reduced and refocused program of research and development with Venezuela and Canada, the continuation of university research to develop improved heavy oil recovery processes, and the monitoring of three ongoing field experiments testing steam drive with additives.

Improved recovery techniques for light oil (FY 1982 request: $8.0 million) would add from 12 to 23 billion barrels to domestic crude oil reserves. DOE's FY 1982 program will continue support of inhouse light oil recovery research at the Bartlesville Energy Technology Center and the support of university research projects. The focus will be on developing advanced techniques that flood a reservoir with a miscible gas, such as carbon dioxide, or with special chemicals. Analyses will continue on selected tests from the 350 enhanced oil recovery field projects begun by industry following the announcement of the ERA incentives program. Emphasis will be on the analysis of advanced processes. Coupled with the results of 22 previously-funded DOE cost-shared field experiments, these analyses are expected to provide better information for industry to make its decisions on commercial application of improved enhanced recovery processes.

The Department's tar sands program (FY 1982 request: $5 million) will continue development of underground, or "in situ", recovery techniques. Nearly 90 percent of the U.S. tar sand deposits are not recoverable by surface technology, and either steam injection or in situ combustion will be needed to obtain significant amounts of oil from these deeper reservoirs. In FY 1982, DOE will use the information gathered from last year's successful small-scale steam injection test at Vernal, Utah, to conduct the engineering and environmental design of a second tar sand steam drive experiment.

Funding requested for captial equipment (FY 1982 request: $750,000) will be used for such items as stirred reactors, filters, pumps, and chromatographs to be used in the enhanced oil recovery program.

The Administration is also proposing that $2 million be rescinded in FY 1981 funds, including $1 million from the heavy oil activity and $1 million from the tar sands activity.

ADVANCED PROCESS TECHNOLOGY

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$6.0	$4.0	$4.2	$4.0	$4.2

Exploratory research in advanced recovery processes, the characterization and utilization of heavy crude oil and synthetic products, and studies of processes for upgrading shale oil, heavy oil and tar sand bitumen are conducted within the Advanced Process Technology program.

Two major microbial processes for enhanced oil recovery will be started in the advanced exploratory research activity (FY 1982 request: $1.0 million). These studies will build on information gathered from research projects begun in 1981 to identify microbe strains that can survive underground conditions while stripping oil from the formation rock.

The product characterization and utilization activity (FY 1982 request: $2 million) will continue the analysis and tabulation of data on crude oils and products, the stability of blends of synthetic and conventional oils, and the correlation of road life with the chemical breakdown of asphalt. These research projects are basic in nature and provide a fundamental data base for advancing petroleum research efforts.

Upgrading processes for heavy crude oil and shale oil will be studied in the upgrading and utilization activity (FY 1982 request: $700,000). Small quantities of specification or reference fuels will be produced and tested for the Department of Defense and made available for industry use. This activity is important in closing the loop between new synthetic feedstocks and fuels and the engines that will use them.

The capital equipment budget request ($500,000) will provide for essential new or replacement equipment needed at the field centers to support the Advanced Process program.

OIL SHALE R&D

(BA in millions)

FY 1980	January 15 Budget 1981	January 15 Budget 1982	Revised Budget 1981	Revised Budget 1982
$28.2	$33.0	$28.1	$33.0	$17.2

Higher oil prices and the creation of the Synthetic Fuels Corporation have stimulated a surge of private sector activity in commercial projects to tap the huge domestic oil shale resource. These commercial projects could contribute substantially to a reduction in oil imports in the future.

DOE's oil shale program has therefore begun a transition from the support of field projects to the development of a forward-looking technology base program.

Within the in situ conversion activity (FY 1982 request: $15.25 million), DOE's involvement in current field projects with Occidental Oil Shale (Colorado), Geokinetics Inc. (Utah), and the Equity Oil Co. (Colorado) will be phased out in FY 1981, and no new funding will be requested for FY 1982. The technologies being demonstrated in these projects have progressed to the point where completion of existing projects or subsequent development and commercialization would be a candidate for funding from the Synthetic Fuels Corporation, from private institutions or by the developers themselves. DOE's research program will now focus on work at the Laramie Energy Technology Center, National Laboratories, and universities, in such areas as the chemistry and physics of oil shale conversion, instrumentation and diagnostics, oil shale fracturing, and environmental impact mitigation. This research is expected to point the way to advanced and improved processes for extracting oil from shale.

The surface conversion activity (FY 1982 request: $1 million) will carry forward a new effort begun in FY 1981 to develop advanced processes capable of converting lean eastern shales to synthetic oil. This resource is far different from the rich western shales that have been the focal point of research for the past two to three decades. The surface conversion activity will also support a waste management experiment to address problems with disposing of spent western shale.

Funding requested for capital equipment (FY 1982 request: $1 million) will provide for instruments and hardware to monitor in situ shale oil production experiments in the laboratory and at government-owned experimental retorts.

ENHANCED GAS RECOVERY PROGRAM

Natural gas continues to provide one-quarter of all the energy used in the U.S. Four large unconventional gas resources have been identified as having significant potential for development and positive impact on future gas supplies. Research in three of the resources is conducted by the Office of Fossil Energy. The fourth, geopressured aquifers, is part of the Department's geothermal energy program. The three within the Fossil Energy program are:

- Western tight gas-bearing sandstone and limestone formations. (FY 1982 request: $6.0 million) This unconventional gas resource exists in blanket and lenticular formations in the Rockies, Northern Great Plains and the Southwest. Estimates of the producible reserve base range from 190-570 trillion cubic feet. Because of its huge size and potential for future development, this is the highest priority in the Fossil Energy enhanced gas recovery program. The bulk of this gas is in lenticular formations which cannot be produced with current technology. In FY 1982, DOE will complete drilling, coring, logging and preliminary production testing of three wells at the Multiwell Experiment Site in Colorado. This experiment is a crucial step in developing a better understanding of how to extract gas from these lenticular formations. Also, standardized core analysis techniques will be developed, and acoustic and seismic instrumentation systems will be tested to enable mapping of the geometry of the tight sand rock formations.

- Eastern gas-bearing shales. (FY 1982 request: $2.6 million) Located in the Applachian, Michigan and Illinois Basins with an estimated producible reserve base of 12-39 trillion cubic feet. The U.S. Geological Survey is working with DOE in a six-year research effort to study geology, geochemistry, rock mechanics, and other research disciplines applied to the eastern shale. In FY 1981, the major resource characterization activities will be completed. In FY 1982, an assessment of the Devonian shale gas resource will be published and an "offset well" test will be completed and data obtained on gas production rates. Excavation will also be completed for a project in which researchers will mine back through a fractured Devonian shale seam to verify visually the effectiveness of fracturing technology and diagnostic instrumentation.

- Natural gas trapped in coalbeds. (FY 1982 request: $1 million) Technologies for recovering methane from coalbeds in conjunction with mining are relatively well-developed; however, the more attractive, long-term target is recovery from unmineable coal seams, for which considerable technology development and increased fundamental knowledge is required. Estimates of producible reserves range from 25-45 trillion cubic feet. DOE's current program involves some 20 contracts including nine industry cost-shared efforts to test different extraction and utilization techniques. In FY 1982, lab and field experiments will continue leading to improved designs for hydraulic fracturing of coal seams, and an evaluation will be completed of methane production from deep, unmineable seams at two sites in the Rocky Mountain basins.

Environmental assessments plus technical and cost benefits analyses of the field experiments in the enhanced gas recovery program would be funded in the environment and support activity (FY 1982 request: $400,000).

In refocusing the enhanced gas recovery program on longer-range/high-risk and technology base activities, the Department is proposing rescissions totalling $3 million -- $1 million from each of the three unconventional gas categories in the Fossil Energy program -- from an FY 1981 appropriation of $30.5 million.

RESOURCE APPLICATIONS FUNCTIONS

As indicated on page 2, the recent realignment of the Department transferred several functions to the Office of Fossil Energy that were originally conducted by the Office of Resource Applications. The following is a description of these functions and their budgetary status:

Coal Resource Management

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$2.25	$ 0.5	$ 1.2	$ 0	$ 0

Through the Office of Coal Resource Management, the Department has assisted the commercialization of coal synthetic fuel processes that have the greatest potential for displacing imported oil. Assistance has been offered in such areas as permitting and licensing, streamlining regulatory processes at all government levels, and Environmental Impact Statement preparation. This office also provided technical evaluation to determine which proposals submitted under the Alternative Fuels program should be supported and has continued monitoring the selected projects to determine the status of licenses, permits, environmental and socioeconomic efforts. With cessation of activities under the interim Alternative Fuels Program on June 30, 1981, this evaluation function will be completed within DOE.

Many of the analyses conducted previously by this office in support of the near-term commercialization of coal-based technologies either will no longer be required or will be conducted elsewhere. The Administration, therefore, is proposing a rescission of the $0.5 million appropriated in FY 1981 for these efforts.

This activity also includes administering the coal loan guarantee program, authorized by the Energy Policy and Conservation Act of 1975. Under that legislation, the Department may provide financial incentives to small- and medium-sized coal producers to develop, expand, or reopen underground low-sulfur coal mines. The authority was expanded in 1978 to include coal preparation plants designed to reduce the sulfur content of coal. Congressional appropriations in 1978 provided $62 million of loan guarantee authority with a $6 million loan default fund. To date no coal producers have qualified under the guidelines of the Act. No guarantees have been issued, and only two conditional guarantees have been approved. The Administration is proposing to rescind the $6 million of unobligated funds.

The Department has also conducted technical information and guidance programs directed at the revitalization of the anthracite coal industry in the Northeast. Through a combination of public awareness programs and field projects, this activity has sought to improve the prospects for anthracite production and use. With the improving economic climate in the coal industry, this near-term Federal function will be phased out and no funds are requested for FY 1981 or FY 1982. The problems for increased anthracite production are related to its high price. Increases in oil and gas prices due to certain regulatory reforms as well as the tax reduction policies of the Administration are expected to improve the economic climate for the anthracite industry.

Oil and Gas

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$ 4.0	$5.1	$1.5	$ 4.2	$ 0

By assisting the private sector through technical guidance, and demonstrations, the Oil and Gas program encourages new, enhanced, and marginal oil and gas production, as well as the opening of restricted or closed areas for oil and gas exploration, and the acceleration of the permitting process for various pipeline and refinery projects. In addition, the program is the focal point for activities undertaken by the National Petroleum Council Federal Advisory Committee, the major conduit for the transmittal of industry's analysis of critical oil and gas issues.

Oil-related efforts have included: a major role in the development of the Economic Regulatory Administration's tertiary front-end incentive regulations that, when combined with other incentives, have resulted in a significant increase in industry enhanced oil recovery activity; appearances before the California Air Resources Board on air quality standards for SOx and NOx emissions which impact thermal oil recovery operations; appearances in refinery permitting cases to demonstrate the importance of new refinery capacity capable of refining heavy sour crudes and producing light transportation products; and the development of an abandoned fields file to be used by industry to develop potential oil resources which now may be economical due to changed economic conditions. The office has also published Trends in Refinery Capacity and Utilization, an authoritative document of future domestic refinery activity and capability to supply U.S. product demands and the growth of foreign refined product export capabilities.

In the natural gas area, the office has: conducted an unconventional gas demonstration program to assist industry in demonstrating the feasibility of utilizing natural gas from Devonian shale and coalbeds in small community and rural development, and provided technical assistance to TVA in the use of unconventional gas for development of an industrial park.

The office has also conducted assessments of the oil and gas potential of lands being considered for withdrawal by the Bureau of Land Management, the Forest Service, and the National Oceanic and Atmospheric Administration (marine sanctuaries).

With the added economic incentives provided the private sector by the decontrol of domestic oil and the trend towards further deregulation of natural gas, in addition to certain regulatory changes such as increased Federal land availability for domestic oil and gas exploration, this activity will no longer be necessary to increase domestic oil and gas supplies. The Oil and Gas program will be phased out during FY 1982 and no funding is requested.

Oil Shale Industrialization

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$3.0	$1.5	$5.5	$1.5	$ 0

The Oil Shale Industrialization program was begun in 1978 with the goal of assisting the development of a commercial oil shale industry in the U.S. by pursuing economic, environmental, regulatory, institutional and socioeconomic issues which have constrained past development.

In FY 1981, the program assisted in the start of three commercial projects for oil shale production. An investment tax credit for oil shale equipment was developed and implemented in Department of Treasury regulations issued on January 23, 1981. Grant awards were made to Colorado and Utah for socioeconomic impact planning to prepare for shale oil development. The office was also the Department's focal point on a DOE-DOI Task Force which prepared recommendations resulting in the revision of the DOI oil shale land policies.

Working with the Soil Conservation Service, the office prepared an analysis of future needs by commercial seed growers for seed stock to revegetate oil shale lands. A market analysis of shale co-products was completed to justify leasing multimineral lands and determine the financial feasibility of these projects. Work also began with the Departments of Housing and Urban Development and Agriculture in an effort to provide housing assistance in shale development areas.

Increased oil prices, the creation of the Synthetic Fuels Corporation, and the proposed tax structure revisions have created a favorable climate for oil shale development to continue. Therefore, the oil shale industrialization activity is no longer needed to carry out the development of a commercial shale oil industry. Any constraints which may still exist for commercial oil shale development will be addressed by other Federal programs such as EPA's environmental regulations and DOI's leasing program. The level of private sector investments in the development of oil shale have reached the point where commercial production will clearly result from the improved economic outlook for this resource. No funding is requested therefore for this activity in FY 1982, and the program will be phased out beginning this fiscal year.

Industrialization Planning

(BA in millions)

January 15 Budget		Revised Budget	
1981	1982	1981	1982
...	$0.8	...	...

The Office of Industrialization Planning was originally established in July 1980 to unify the Federal program for the industrialization of diverse energy resources, including energy transportation efforts formerly conducted elsewhere in the Department. With the Congressional passage of the Alternative Fuels program, the focus of the office was subsequently shifted to manage this interim program. Funding for this effort was provided to the Department of Energy under a separate budget category.

With the transfer to the Fossil Energy program, this office will continue to oversee the $200 million in feasibility studies and cooperative agreement awarded during the first round of the Alternative Fuels Program. With respect to the $300 million appropriated for a second round, the Administration believes proposed projects under this program should more properly compete for financing in the private market along with other energy projects. A rescission is proposed for this $300 million. This decision will not effect either the number or quality of projects which are ultimately selected by the SFC.

The Administration will propose no changes in the $5 billion currently available to the Department for its activities in support of the Defense Production Act (DPA) and the Federal Non-Nuclear Energy Research and Development Act (NNA). Negotiations are currently underway with three proposers — TOSCO, Union Oil, and the Tennessee Synfuels Associates -- under provisions of the DPA, and our evaluation of proposals received under the NNA are expected to be completed by the end of March.

In addition, we are expecting a revised proposal from the Great Plains Gasification Group for its proposed high-Btu synthetic gas project in North Dakota, and we anticipate a final decision on increasing the amount of the conditional commitment for the loan guarantee for this project within a few weeks of receiving the new proposal.

Because the Synthetic Fuels Corporation will assume the primary Federal role in providing the financial stimulus for construction of these commercial projects, no funds will be necessary for this activity in FY 1982.

Federal Leasing

(BA in millions)

	January 15 Budget		Revised Budget	
FY 1980	1981	1982	1981	1982
$ 2.15	$2.78	$3.5	$2.38	$ 0

While we recognize that the Federal leasing program is not part of this Committee's oversight responsibilities, we have included a brief description to provide a complete picture of all functions now conducted by the Fossil Energy office under the recent Departmental reorganization.

During FY 1981, the DOE Federal leasing program will be phased out with a wrap-up of all ongoing activities during FY 1982. In FY 1981, leasing activities will conclude the development of onshore and Outer Continental Shelf (OCS) oil and gas production rate setting procedures and methodology. During FY 1981, the Leasing program will conclude analyses of Federal-State OCS oil and gas along with onshore oil and gas, coal and geothermal permitting barriers. Recommendations to remove onshore energy permitting barriers will be completed in FY 1982 along with the OCS work commitment leasing system. In addition to these leasing program activities, DOE will comply with the U.S. District Court order to promulgate variable work commitment and variable net profit share regulations before July 1981.

All of the DOE Leasing program responsibilities are expected to be transferred to the Department of the Interior in FY 1982; therefore no funding is requested for FY 1982 and a rescission of $0.4 million is proposed for FY 1981 as part of the phase out of the program by the Department.

SUMMARY

In short, the change in strategy reflected in this Fossil Energy R&D and industrialization budget will result in a less costly and more tightly focused Federal program. This budget is a clear signal to private energy companies that they will once again play the primary role in commercializing new technologies. We anticipate that this change in philosophy will not slow down the technological creativity in this country but will in fact stimulate it. In turn, these changes will make it possible to devote more governmental resources to true research needs as the more capital-intensive applied and market-oriented Federal activities are scaled back. In addition, the anti-competitive effects of Government subsidies for commercialization will be eliminated, ultimately benefiting the consumer through lower costs for new energy sources.

The FY 1981 and FY 1982 revised budget proposals are summarized in the attached charts.

Department of Energy
FY 1981 Requests for Rescission
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	Presently Available	Revised Appropriation	Proposed Rescission
COAL			
Mining R&D			
Underground	$31,000	$28,000	-$3,000
Surface	8,000	5,000	- 3,000
Coal Prep & Anal.......	9,000	7,000	- 2,000
Liquefaction			
Indirect Liq	18,000*	12,000	- 6,000
Support Studies/....... Eng. Eval.	12,000	9,000	- 3,000
Demonstration Plants/SRCI-Const.....	157,500	...	-157,500
SRC pilot plants	47,000	46,000	- 1,000
Surface Gasification			
Peat Gasif.............	13,000	8,000	- 5,000
Demo. Plants.			
High-Btu Gas-Opex ...	6,000	1,000	- 5,000**
" " " -Const....	44,000	...	-44,000
Low-Btu Gas -Const....	45,400	...	-45,400
Adv. Envir. Cntrl Tech.			
Adv. Flue Gas Desulfurization........	9,000	6,000	- 3,000
Combustion Systems			
AFB boiler, 30MWe	3,100	100	- 3,000**
Coal-oil mixtures	22,000	4,550	-17,450**
Heat Eng/Heat Rec			
Directly fired heat cycles...............	5,600	2,600	- 3,000
Low grade heat rec....	4,300	2,300	- 2,000
Magnetohydrodynamics			
Engineering Dev.......	31,800	27,800	- 4,000
Supporting Res........	11,400	9,400	- 2,000
TOTAL COAL RESCISSIONS			-$309,350

* Includes $6.0 million appropriated in FY 1981 for the Grace medium-Btu gasoline plant design ($3.0 million of which is proposed for rescission). The project is included in the Surface Coal Gasification activity.

** Also proposed in the January 15 Carter Budget Request.

Department of Energy
FY 1981 Requests for Rescission
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	Presently Available	Revised Appropriation	Proposed Rescission
PETROLEUM			
Enhanced Oil Recovery			
Heavy Oil	$7,300	$6,300	- $1,000
Tar Sands	5,500	4,500	- 1,000
TOTAL PETROLEUM RESCISSIONS			- $2,000
GAS			
Enhanced Gas Recovery			
Eastern gas shales	12,400	11,400	- 1,000
Western tight sands	12,400	11,400	- 1,000
Methane from coalbeds	5,000	4,000	- 1,000
TOTAL GAS RESCISSIONS			- 3,000
RESOURCE APPLICATIONS (transferred to FOSSIL ENERGY)			
Domestic Energy Supply			
Coal	500	0	- 500
Loan Guarantee	6,000*	0	- 6,000
Oil and Gas	5,100	4,200	- 900
Federal Leasing	2,775	2,375	- 400
TOTAL RESOURCE APPLICATION RECISSIONS (for functions transferred to Fossil Energy)			- 7,800
TOTAL FOSSIL ENERGY RESCISSIONS			-$322,150

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* Appropriated in 1978

Department of Energy
FY 1982 Budget Request
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	FY 1981 Appropriation*	January 15 Budget Request	Revised Budget Request
COAL			
Mining R&D			
Underground Mining	$ 31,000	$ 20,000	$ 15,000
Surface Mining	8,000	2,000	...
Coal Prep & Analysis......	9,000	10,000	6,000
Capital Equipment.........	1,500	800	800
Subtotal..................	49,500	32,800	21,800
Coal Liquefaction			
Direct Hydrogenation......	57,000	65,000	20,000
Solvent Extraction........	32,000	63,000	30,000
Indirect Liquefaction.....	18,000**	22,000	14,000
Third Generation Proc.....	17,200	18,300	18,300
Support Studies/Eng....... Evaluations	12,000	14,600	10,600
Liquefaction Demo Plants..	384,500	703,400	12,300
Capital Equipment.........	700	700	700
Subtotal..................	521,400	887,000	105,900
Surface Gasification			
High Btu Gasification.....	23,000	8,700	1,140
Low/Med Btu Gasfication...	19,000	13,200	13,200
Third Generation Proc.....	17,000	28,870	27,100
Technical Support.........	10,000	12,000	12,000
Gasification Demo Plants..	95,400	153,600	...
Capital Equipment.........	500	550	550
Subtotal..................	164,900	216,920	53,990
In Situ Gasification			
Low/Medium Btu Gas.......	9,200	3,000	3,000
Gov/Industry Coop Proj...	...	2,200	...
Steeply Dipping Beds.....	...	3,200	3,200
Environmental Support....	500	1,300	1,300
Supporting Research......	200	800	800
Capital Equipment........	100	300	300
Subtotal.................	10,000	10,800	8,600

* Does not include proposed rescissions listed on the previous pages.

**Includes $6.0 million appropriated for the Grace medium Btu gasoline plant.

Department of Energy
FY 1982 Budget Request
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	FY 1981 Appropriation*	January 15 Budget Request	Revised Budget Request
COAL (con'd)			
Adv Res & Tech Dev			
Processes................$	20,400	21,400	21,400
Direct Utilization.......	9,100	12,800	12,800
Materials & Components...	9,000	12,000	12,000
Program Direction &...... Coordination	7,861	11,500	8,500
University Coal Res......	5,000	5,400	5,400
General Plant Projects	3,000	6,000	6,000
Capital Equipment........	500	500	500
Construction.............	3,400	3,000	1,000
Subtotal.................	58,261	72,600	67,600
Adv Environ Cntrl Tech			
Flue Gas Cleanup.........	18,000	17,400	6,500
Gas Stream Cleanup.......	13,000	14,400	14,400
Cleanup Base Tech........	6,000	5,500	5,500
Capital Equipment........	500	500	500
Subtotal.................	37,500	37,800	26,900
Combustion Systems			
Atmospheric Fluidized.... Bed Combustion	12,800	15,300	11,300
Pressurized Fluidized.... Bed Combustion	21,400	50,900	17,000
Adv Combustion Tech......	...	4,100	4,100
Alternative Fuel Util....	22,000	6,400	6,400
Capital Equipment........	300	...	...
Subtotal.................	56,500	76,700	38,800
Heat Eng & Heat Rec			
Central Power Systems....	22,200	16,500	9,100
Dispersed power Systems..	9,900	6,500	6,500
Heat Recovery Component..	4,300	6,000	...
Capital Equipment........	...	450	450
Subtotal.................	36,400	29,450	16,050

* Does not include proposed rescissions listed on previous pages.

Department of Energy
FY 1982 Budget Request
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	FY 1981 Appropriation*	January 15 Budget Request	Revised Budget Request
COAL (con'd)			
Fuel Cells			
Phosphoric Acid Sys Dev...	$ 21,000	$ 10,100	$ 10,100
Molten Carbonate Sys Dev..	9,000	14,100	14,100
Advanced Concepts.........	2,000	4,400	4,400
Subtotal..................	32,000	28,600	28,600
Magnetohydrodynamics			
Open Cycle Systems........	65,500	59,500	...
Closed Cycle System.......	1,000	500	...
Capital Equipment.........	500	...	...
Subtotal..................	67,000	60,000	...
Program Direction..........	10,818	12,520	12,520
COAL TOTAL	$1,044,279	$1,465,190	$ 380,760
PETROLEUM			
Enhanced Oil Recovery			
Heavy Oil.................	$ 7,300	9,100	7,100
Light Oil.................	5,200	8,000	8,000
Tar Sands.................	5,500	6,000	5,000
Capital Equipment.........	600	750	750
Subtotal..................	18,600	23,850	20,850
Advanced Process Tech			
Adv Exploratory Res.......	1,800	1,000	1,000
Product Characterization.. & Utilization	1,300	2,000	2,000
Shale Oil Refining &...... Utilization	400	700	700
Capital Equipment.........	500	500	500
Subtotal..................	4,000	4,200	4,200

* Does not include rescissions listed on previous pages.

Department of Energy
FY 1982 Budget Request
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	FY 1981 Appropriation*	January 15 Budget Request	Revised Budget Request
PETROLEUM (con'd)			
Oil Shale			
In Situ Conversion........$	31,298	$ 25,850	$ 15,250
Surface Conversion........	750	1,300	1,000
Capital Equipment.........	1,000	1,000	1,000
Subtotal..................	33,048	28,150	17,250
Drilling & Offshore Tech			
Drilling..................	500	...	...
Offshore Technology.......	1,300	...	...
Environment & Support.....	200	...	...
Capital Equipment.........	370	...	...
Subtotal..................	2,370	...	...
Program Direction.........	1,475	1,620	1,620
PETROLEUM TOTAL...........$	59,493	$ 57,820	$ 43,920
GAS			
Enhanced Gas Recovery			
Eastern Gas Shales........$	12,400	$ 10,900	$ 2,600
Western Tight Sands.......	12,400	11,000	6,000
Methane from Coal Beds....	5,000	5,000	1,000
Environment & Support.....	248	700	400
Capital Equipment.........	500	600	200
Subtotal..................	30,548	28,200	10,200
Program Direction.........	415	460	460
GAS TOTAL.................$	30,963	$ 28,660	$ 10,660

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* Does not include rescissions listed on previous pages.

Department of Energy
FY 1982 Budget Request
Fossil Energy Research and Development
(Budget Authority in Thousands)

Program	FY 1981 Appropriation*	January 15 Budget Request	Revised Budget Request
RESOURCE APPLICATIONS (transferred to FOSSIL ENERGY)			
Domestic Energy Supply			
Coal	$ 500	$ 1,200	...
Oil Shale Industrialization	1,500	5,500	...
Oil and Gas	5,090	1,500	...
Industrialization Planning	...	800	...
Program Direction	5,096	3,000	...
Subtotal	$12,186	$12,000	...
Federal Leasing	2,775	3,489	...
TOTAL RA FUNCTIONS TRANSFERRED TO FOSSIL ENERGY	$14,961	$15,489	...
FOSSIL ENERGY TOTAL	$1,149,696	$1,567,159	$ 435,340

* Does not include rescissions listed on previous pages.

SRC-I AND SRC-II

Senator McClure. Thank you very much. I appreciate the highlighting. And, of course, I appreciate the full statement.

There is a great deal of detail in the energy budget. I don't think there is any budget that has more different items in it than does the Department of Energy's proposals. And, unfortunately, there is never enough time to touch on all of them in the hearing process. But we will be submitting some questions for the record with regard to some items that we simply will not be able to get to this morning.

It may come as no surprise to you—I think it would be no surprise to anyone around this town—that one of the most talked about decisions that we must make is the future of SRC–I and SRC–II. It is being talked about in this committee and in the Energy and Natural Resources Committee. I would like to explore those two projects initially.

SRC–I, to be located in Newman, Ky., and SRC–II, to be located near Morgantown, W. Va., represents the Department's solvent refined coal demonstration program initiated in July 1978. SRC–I was to demonstrate the solid SRC process while SRC–II was to demonstrate the liquid SRC process.

SRC–I has recently been proposed for rescission of its unobligated 1981 funds while $100 million of SRC–II funding has been proposed for deferral and may later be proposed for rescission.

First, I wonder if you would tell me what the basis was for those two decisions?

Mr. LeGassie. Well, the basic decision, I have already alluded to. That is the view that if these projects were to proceed, they should proceed on the basis that they be proposed to the Synthetic Fuels Corporation and considered there by that entity in competition with all the other projects that it has.

Senator McClure. Could I interrupt at that point to ask if the administration has proposed legislative language for the change that would be necessary in the authorizing statute to permit that to be done?

Mr. LeGassie. No.

Our analysis indicates that the existing legislation is adequate. No legislative change is necessary.

Senator McClure. Aren't these demonstration projects?

Mr. LeGassie. I need to explain, if you will bear with me a moment, sir.

Senator McClure. All right. Surely. I don't mean to interrupt.

Mr. LeGassie. If the proposal had been to pick these projects up from the Department of Energy and implant them in the Synthetic Fuels Corporation as some kind of executive action, then it would have been necessary to propose legislation to do that. But that is not the proposal. The proposal is a course of action such as has indeed been followed by one of the demonstration projects—namely, the Memphis medium-Btu gasification project. That is what is in mind.

So let me just say what Memphis has done so that it would be clear that the intent is that the other projects should consider taking the same action. Memphis, although a contractor of the Department of Energy and proceeding with the design of this demonstration plant which is historically in our program and in our 1981 budget, has prepared a proposal as a private sector entity and submitted that proposal to the Synthetic Fuels Corporation.

That proposal calls for the project to be selected by SFC, although it would be in competition with others, and that would require a positive decision of the Corporation. The Corporation, if it selected Memphis to proceed on this basis, would then provide a loan guarantee or price supports, powers that it has available to it, to meet the needs of the project.

In this way, there would be no funding required in fiscal 1982 in the Department of Energy's budget. The intent is that such an action be considered by the sponsors of both SRC–I and SRC–II.

Now, in fact, that proposal is still under consideration by the sponsors of SRC–II in that these sponsors include the governments of Japan and Germany. There was a meeting a few weeks ago with the other two governments in which the United States outlined this approach. There is another meeting of the three governments—the United States, Japan, and German Governments—now scheduled for June 4 and 5 at which time it is expected that the governments will make a decision as to whether or not they would support such a proposal to the Synthetic Fuels Corporation for the SRC–II project.

It is entirely possible for such a proposal to be constructed. The funding sources outside the SFC would be the other two governments. And so funding could be made available if the other governments decided that is what they wanted to do.

There are legal memoranda which have been prepared which we can furnish this committee which discuss the legal basis under which such actions could proceed without requiring any amendment of the Energy Security Act.

Senator McClure. Let me, if I may, then ask this question at this point: You have made a determination in your mind that the SRC–I and SRC–II, if they go ahead at all, should go ahead as commercial projects and not as demonstration projects; is that correct?

Mr. LeGassie. That does not quite follow up, but I understand why you ask the question. Because mostly, we think of the Synthetic Fuels Corporation's primary mission of supporting commercial projects. But there is within the act that created it guidance and direction and powers associated specifically with their support of demonstration modules that could——

Senator McClure. That is a fascinating little twist of the legislative history. I wish you would go back and read the legislative history or have your counsel do it. Because that was clearly not the intent of Congress in passing that law. I wouldn't be at all——

Well, let me put it this way: as a Member of the Congress who helped write that act and who was sitting through all of the conferences with respect to the development of that act, I wouldn't begin to represent to people that I thought they could make it qualify under the Energy Security Act and the Synthetic Fuels Corporation without a change in the law.

Mr. LEGASSIE. Well, I would be happy to furnish the material that our general counsel has prepared, sir, which——

Senator MCCLURE. I hope you will. And I will be fascinated by that journey into creative forensics.

Mr. LEGASSIE. Well, I think it is very specific. There is reference to demonstration, to joint projects, and that these projects are not now supported by loan guarantees or price supports. They are supported by direct funding from the Corporation up to 60 percent of the anticipated cost of the project.

And there is specific language referring to demonstration modules. And that phrase is, in fact, specific—that they are not of commercial size. And that is in fact a very accurate definition of the concept of both SRC–I and II in which the equipment as proposed now would be of commercial size module, but not a commercial size plant.

That is, the 6,000-ton-a-day plant would have equipment in it that would not need to be further expanded in size for commercial use, but one would have to take the plant and replicate it for five more times in order to have a total facility which was commercial at a later date.

[The information follows:]

SRC PROJECTS

The general counsel's opinion which would permit the SRC projects to be submitted to the Synthetic Fuels Corporation for financial assistance is attached.

The authority of the United States Synthetic Fuels Corporation to participate in cost sharing agreements in the nature of those currently undertaken in the U. S. Department of Energy's fossil fuels demonstration program.

Summary:

Section 126(2)(A) of the Energy Security Act, Public Law 96-294, directs that in accomplishing its synthetic fuel production strategy the United States Synthetic Fuels Corporation shall employ financial assistance in such manner as will, in the judgment of the Board of Directors, "(i) incorporate technological diversity of processes, methods and techniques for each domestic resource that offers significiant potential for use as a synthetic fuel feedstock as well as (ii) offer the potential for achieving the national synthetic fuel production goal set forth in section 125." To the extent that compliance with this directive would cause the Corporation's issuance of financial assistance to less than fully commercial undertakings (i.e. synthetic fuel project modules), the Corporation could issue such assistance under its joint venture authority in Section 136 of the Act.

The projects currently undertaken by the Department of Energy in its fossil fuels demonstration program could qualify for financial assistance from the Corporation as either synthetic fuel project modules, or in certain cases, as commercial scale synthetic fuel projects. Modifications to the existing agreements, however, could well be necessary to allow the projects to meet the requirements of the ESA. Moreover, the Corporation's Board of Directors would have to make certain findings required by the statute prior to the issuance of financial assistance.

Applicable ESA Provisions:

Subsection 126(a)(2)(A) of the Energy Security Act, Public Law 96-294 (ESA) requires that during the initial phase of its existence the United States Synthetic Fuels Corporation (Corporation) shall utilize its financial assistance authority not only for immediate commercial production of synthetic fuels but also to incorporate into the ESA synthetic fuel production strategy "a technological diversity of processes, methods and techniques for each domestic resource that offers significant potential for use as a synthetic fuel feedstock" as well as the potential for achieving the statutory production goal stated in Section 125 of the ESA.

Section 136 of the ESA establishes and describes the ability of the Corporation to participate in joint ventures for synthetic fuels modules, prior to the approval of the Comprehensive strategy, which in the judgment of the Board of Directors:

1. demonstrate the commercial feasibility of the technology for the production of synthetic fuel from a significant domestic resource which offers potential for achievement of the national synthetic fuel goal set forth in Section 125; and

2. can, at the same site, be expanded into a synthetic fuel project.

This section defines a synthetic fuel project module as

> "any facility located in the United States which -
>
> (i) is of a size smaller than a synthetic fuel project [as defined in subsection 112(18) of the ESA],
>
> (ii) will, if successful, demonstrate the technical and economic feasibility of the commercial production of synthetic fuels; and
>
> (iii) can eventually be expanded at the same site into a synthetic fuel project."

Section 136 limits the Corporation's cost sharing authority to participation in synthetic fuel project modules at a maximum share of 60 percent of estimated total project costs per module, for a period not to exceed five years after the date of operation of the module. Additionally, the Corporation cannot incur liability on the project in excess of its contractual commitment to contribute capital to the venture and cannot deny the primary responsibility for management of the joint venture to persons in the joint venture.

Certain procedural requirements contained in sections 127 and 131 of the ESA do not substantively affect the Corporation's authority to undertake cost sharing arrangements under section 136. However, they do affect the manner in which such assistance can be distributed. They are described, briefly, below.

1. Subsection 127(a) (1) requires the Corporation to "solicit proposals from time to time from concerns interested in the construction or operation, or both, of synthetic fuel projects."* Subsections 131(a) and (b)(4) provide that the Corporation should solicit bids for financial assistance on a competetive basis where it is "practicable and provident to do so." Section 127(c) further provides that any concern may request the Board of Directors to issue a solicitation for proposals for a general type of synthetic fuel project, and the Board of Directors has authority to do so. We interpret this provision to enable the Corporation to respond with solicitations to any such request made by sponsors of the demonstration projects under consideration.

2. Section 127(f) requires the Corporation to give priority consideration to financial assistance applications from concerns which propose a "synthetic fuel project" in a state which, in the judgement of the Board of Directors, indicates an intention to expedite all relevant regulatory, licensing and related government agency activities. Given the definition of "synthetic fuel project" in subsection 112 (18)(A), and the separate definition of "joint venture" in subsections 112(9) and 136 which restricts support under section 136 to synthetic fuel modules, it could be argued that subsection 127(f) does not, by its terms, apply to consideration of financial assistance involving project modules.

Section 127(g) provides for the Corporation's consultation with, and provides an opportunity for written comment by, the Governor of any State in which a proposed joint venture project under Section 136 would be located with regard to: "(1) the manner in which the project would be developed and (2) regulatory licensing and related governmental activities pertaining to such project". This provision does not substantively place restrictions on the Corporation's authority to enter joint ventures, although it does obligate the Corporation to consult with those States directly affected by such ventures.

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*The Corporation has already issued its first solicitation for proposals in compliance with section 127(a)(3) which closed on March 31, 1981.

3. Section 131(p) prohibits the Corporation's Board of Directors from engaging the Corporation in cost sharing ventures, unless the Board "determines that neither price guarantees, purchase commitments nor loan guarantees will adequately support the construction and operation of the synthetic fuel project or will restrict the available participants for such project." We interpret this provision as an indication of Congress' intent that an undertaking which the Corporation determines to be commercially viable should be considered for financial assistance as a synthetic fuel project pursuant to sections 133 through 135 regardless of whether the size of such a project might otherwise qualify it as a Section 136 synthetic fuel project module. Should the sponsors of the demonstration projects at issue resort to the Corporation for financial assistance, a decision by the Corporation's Board of Directors that any of the projects are commercially viable would render such projects eligible for price guarantees, purchase commitments and loan guarantees. The size dimensions of those projects are not determinative of whether they are commercially viable for purposes of seeking those types of financial assistance.

The direction in Section 126(a)(2)(A) to promote technological diversity of processes, methods and techniques for each domestic resource ..." can be read in combination with the following instruction from the legislative history and other language in the ESA. The Conference Report accompanying the ESA explains Corporation joint venture authority under Section 136 as a means of providing that Corporation incentives shall be as flexible as possible "[I]n order to assure that demonstration of the maximum number of potentially viable synthetic fuel technologies from the widest variety of domestically available feedstocks ...," H.R. Rep. No. 1104, 96th Cong., 2d Sess. 223 (1980). Additionally, Section 126(a)(2)(B) directs the Corporation, prior to Congressional approval of the comprehensive strategy required by subsection (c) of Section 126, to employ financial assistance in a manner which incorporates diversity of domestic resources, including different types and qualities of coal as synthetic fuel feedstocks, each of which is to be utilized in a variety of processes and methods for synthetic fuels production. Where application of a technology to a resource would create technological or economic risks rendering the process commercially nonviable, promotion of that technology for purposes of technological diversity prior to approval of the comprehensive strategy could require funding of a synthetic fuel module.*

DOE Demonstration Projects

The DOE is currently participating in the funding of five cost shared demonstration projects. They are:

Solvent Refined Coal-I (SRC-I).

Solvent Refined Coal-II (SRC-II).

High BTU Synthetic Pipeline Gas Plant (Illinois Coal Gasification Group, (ICGG)).

High BTU Synthetic Pipeline Gas Plant (CONOCO).

Medium BTU Industrial Fuel Gas Plant (Memphis Plant).

These projects were undertaken by DOE to advance the state of the art and to reduce technological and economic risks in the particular processes so that synthetic fuels could be produced from a broad range of domestic coals in a more efficient manner.

A rescission request respecting the DOE 1981 funding to support all but the SRC-II project was submitted to the Congress, Rescission Proposal No. R81-64, H.R. Doc. 97-32 (March 18, 1981). Moreover no funds for any of the projects, including SRC-II, have been included in the DOE 1982 Budget Request, see Additional Details on Budget Savings, H.R. Doc. 97-41, p. 131 (April 1, 1981).

SFC Authority Applicable to DOE Fossil Fuel Demonstration Projects.

The following paragraphs discuss the authority of the Corporation to undertake each of the above noted DOE fossil fuel demonstration projects. Among the major issues discussed are the permissible share of funding which the Corporation can award for joint venture participation, the eligibility of current project participants under the ESA, the issue of project management as it relates to both DOE's and the Corporation's authority, and the length of time during which the Corporation can provide financial assistance to projects.

1. SRC-I. The SRC-I project could qualify as a synthetic fuel project module under subsection 136(d)(i)(A) the ESA. It is intended to demonstrate the commercial feasibility of an advanced direct coal liquefaction process at less than full commercial scale production and could eventually be expanded at the same site into a fully commercial project. Successful economic and technical operation of the proposed 6,000 ton per day plant is anticipated to produce the

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*Under Section 141(a), the Corporation has authority to own synthetic fule projects and contract for the construction and operation of such projects as a means of achieving the technological diversity directive of subsection 126(a)(2). Corporation construction projects may not be undertaken unless such projects are necessary to meet the objectives of Section 126(a) and would not otherwise be constructed with the other forms of financial assistance available to the Corporation, including joint venture participation.

equivalent of 20,000 bbl. of oil per day and could lead to a commercial scale plant using up to 30,000 tons per day of coal to produce a range of synthetic fuels which would be equivalent to 100,000 bbl. per day of oil.

Because Section 136(a) of the ESA restricts the Corporation's cost share in a joint venture to 60 percent of total costs per project, the Corporation could not assume the entire amount of DOE's currently negotiated share of project costs since DOE's share of project costs is greater than 90 percent. The estimated total cost of the project is $1.5 billion. The DOE funding share is approximately $1.488 billion. The contractor (International Coal Refining Co.) will fund $90 million of the project; the Commonwealth of Kentucky will fund $30 million for pollution control equipment.

Despite Kentucky's participation in the project, the current participants in SRC-I should be able to qualify for joint venture assistance from the Corporation if the percentage of their cost contribution is increased. Section 136(d)(2) defines joint ventures as an agreement under which the Corporation and "one or more persons" participate. The definition of "person" in Section 112(12) includes an individual, company, cooperative, partnership, corporation, association, consortium, unincorporated organization, trust, estate, or entity, organized for a common business purpose. A state government, however, is defined as a concern under Section 112(3)(B). ICRC's participation in the venture would clearly allow the Corporation to participate within the Section 136 (d)(2) restriction, since ICRC qualifies as a "person" under Section 112(12). Furthermore, Sections 136(a) and (c) clearly evidence a legislative intent that a "concern" may be selected as a participant in a joint venture in which the Corporation participates and a state government is defined as a concern under Section 112(3)(B). Therefore, the participation of the Commonwealth of Kentucky in the project should not present a problem.

Section 136(f) allows the Corporation to participate in management decisions of the joint venture but prohibits the Corporation from denying persons who are joint venturers primary management responsibility. Although "primary management responsibility" is not defined in the ESA, the terms of the SRC-I agreement indicate that DOE may have undertaken this responsibility under a commonplace usage of this concept. Under the current agreement, DOE retains all rights of technical direction. DOE and the Contractor mutually establish and change baselines in accordance with the terms of the contract. With regard to changes in scope, both parties must agree on any changes to the contract, the statement of work, the design, cost and schedule baselines. The contractor is presently performing Phase I, the Final Design, phase of the project. If the Corporation were to consider this project under its joint venture authority, the Corporation would have to delineate and assign primary management responsibility to persons in the venture, although the Corporation would have to assure itself that project activities are being efficiently conducted within prescribed costs.

It is questionable whether the Corporation could unqualifiedly adopt the contingent liabilities provision of the existing cost sharing Agreement, which provides that DOE assumes, subject to the availability of appropriated funds, all risk of loss, damage or destruction to project property, including liability for all claims in excess of or otherwise not covered by insurance. The Corporation's overall liability on a project module is restricted by the 60 percent limitation on its equity investment imposed by Sections 136(a) and (f)(2). These provisions require that the Corporation's liability be limited to the extent of its contractual commitment to contribute capital under the 60 percent ceiling. Therefore, it appears that the Corporation would not assume the contingent liability contained in the DOE SRC-I agreement.

Section 136(c) requires that the SFC shall in no case participate in a cost sharing venture longer than five years from the date of operation of the project module. The SRC-I agreement provides that the Contractor may buy out DOE's interest in the plant over a maximum period of five years from the date of plant operation. Should the contractor fail to exercise its buyout option, DOE may continue operating the plant as a Government owned facility or it may cease operations. The duration of the current SRC-I cost sharing agreement would not itself prohibit the Corporation from participating in the venture subject to the five year limitation. Should the Contractor decline to purchase the plant from the Corporation upon expiration of the five year period, the Corporation could sell its interest to other parties or otherwise dispose of it.

2. SRC-II: The SRC-II plant could qualify as a synthetic fuel project module under Section 136(d)(i)(A) because it is intended to demonstrate the commercial feasibility of direct coal liquifaction at less than full commercial scale production which eventually can be expanded at the same site into a full scale commercial project.

Under the DOE SRC-II cost sharing agreements, contributions by foreign governments and domestic and foreign private sector participants are expected to be approximately 50 percent of the total project cost. Therefore, the Section 136(a) limitation of Corporation financial participation in joint ventures to 60 percent of project costs would not prohibit the Corporation from participating in the current financial contribution formulation of the SRC-II project.*

The American, German, and Japanese private sector partners in Solvent Refined Coal International, Inc., DOE's SRC-II contractor, can fit the definition of "persons" within the meaning of section 136(d) (2). Therefore, were the project to include funding arrangements to be carried out solely through an arrangement between SRC International, Inc. and the Corporation, the ESA restriction of Corporation joint venture authority to participation in ventures in which one or more persons participate could be met.

While it is true that the definition of "person" in section 112(12) does not explicitly refer to "foreign governments," this should not necessarily preclude the Corporation from entering into a cost sharing arrangement directly involving the Governments of the Federal Republic of Germany and Japan, if those parties so desire. Furthermore, subsections 136(a) and (c) clearly evidence the legislative intent that a "concern" may be selected as a participant in a joint venture in which the SFC also participates. The definition of "concern" in Section 112(3) includes "any foreign government or agency thereof when participating in joint ventures with "a person" (a definition met by the private participants in the SRC-II project) under Section 112(12). Moreover, it is also possible that the organization in which these Governments and SRC International, Inc. participate could be defined to constitute an "entity organized for a common business purpose" under Section 112(12).

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*The Department has received a new cost estimate for this project. Since the cost share participation by the other participants is at a fixed dollar amount, any increase in actual costs could change the respective cost share percentages.

The requirement of Section 136(f), which prohibits the Corporation from denying primary management responsibility to persons who are co-venturers, would require some restructuring of the present SRC-II project management specified by the DOE agreement with SRC International, Inc. The restructuring which would be necessitated by this requirement is unclear at this time. Under the DOE SRC-II agreement, SRC International, Inc. is responsible for the construction and operation of the plant. Whether this function constitutes "primary management responsibility" for Corporation joint venture purposes depends upon the role which the Corporation would take in the project. Nevertheless, in all Corporation funded projects it will be necessary for the Corporation to establish certain management activities to assure that projects are efficiently conducted within prescribed costs.

As in the case of SRC-I, DOE's assumption of contingent liabilities due to insurance and indemnity provisions contained in the DOE SRC-II agreement cannot be entirely fulfilled by the Corporation due to statutory provisions which limit its liability to the extent of its contractual capital commitment to the project module and the 60 percent limit upon the Corporation's cost share.

The requirement of Section 136(c) that the Corporation shall in no case participate in a joint venture longer than 5 years after the date of operation should not affect the Corporation's ability to enter this project. This section also should not require major restructuring of the current makeup of the project. The 5 year period of Section 136(c) is significantly longer than the buyout provision of the DOE SRC-II agreement, which is to be initiated after 2 1/2 years of plant operation. If the project participants were not to buy out the Corporation's interests in the project, then the ESA would require the SFC to sell its interest in the project to other interested concerns or otherwise dispose of its role in the undertaking within five years.

3. ICGG

This demonstration project is within the definition of a synthetic fuel project module set out in Section 136(d)(1)(A) of the ESA. The overall objective of the project is to demonstrate the commercial application of the COGAS process at a coal utilization rate of 2,210 tons per day of Illinois No. 6 coal. It is anticipated that successful operation of the plant will result in a buyout of DOE's share and expansion of the plant to a processing capability of 26,000 tons per day and production of a market competetive product.

Because the current cost sharing arrangement agreed upon by DOE and the project sponsor, (Illinois Coal Gasification Group (ICGG)), provides for sharing on a 50/50 basis, the Corporation could assume DOE's share and remain within Section 136(a), which limits SFC joint venture financing to 60 percent of total project module costs. The current agreement, however, provides that the amount of costs to be shared excludes $199 million in government contingency and in-house management funds. It is unclear how the Corporation would apportion and compute various elements of project costs not currently included in the 50/50 cost sharing arrangement. Should inclusion of these costs result in the Corporation facing a cost share in excess of 60% of estimated total module costs, alterations to the cost sharing arrangement would be necessary to the extent of that excess.

It is questionable whether the project management arrangement currently agreed upon by DOE and the industrial partner could be adopted by the Corporation without restructuring. As previously indicated, Section 136(f) prohibits the Corporation from denying "primary management responsibility" to persons in the joint venture. Project management responsibility for construction and operation of the module has been delegated by DOE to the U.S. Army Corps of Engineers Division, Huntsville, Alabama (USAEDH). The industrial partner is responsible for actual performance of the work, including the management of subcontractors. Assuming that the role delegated to USAEDH is that of "primary management responsibility," such responsibility would not ultimately rest in a "person in the joint venture" for the purpose of compliance with Section 136(f). In such a case we assume that some modification of this arrangement would be necessary should the Corporation select this project for joint venture participation.

As in the other demonstration projects DOE has assumed contingent liabilities under the Insurance and Indemnity provisions contained in the agreement. The previously discussed restrictions upon the amount of overall financial participation in joint ventures by the Corporation appear to necessitate restructuring of this arrangement should the Corporation undertake joint venture participation in this project.

Under the current agreement, operation of the module is scheduled for a 42 month period with an optional 18 month extension for testing of additional alternative feedstocks. Upon conclusion of this phase, the industrial participant may purchase the plant or lease it for a period of up to three years. If the industrial participant does not elect to purchase the plant, the government has the sole right to dispose of the plant. The 60 month maximum duration placed upon the operation phase complies with the 5 year limitation placed upon the Corporation for involvement in cost sharing projects under Section 136(c).

4. CONOCO

This demonstration project is within the definition of a synthetic fuel project module set out in Section 136(d)(i)(A). The objective of the plant is to demonstrate to industry the practicability and economic attractiveness of a particular gasification process. The demonstration plant is planned to initially process 1,256 tons of presized coal per day to produce 19 million SCFD of 950+ BTU/SCF gas. DOE has been operating under the assumption for this project that to be commercial it would have to have the capability to process approximately 16,000 tons per day of coal at a production rate of 250 million SCFD pipeline quality SNG, with a heating value of at least 950 BTU/SCF.

The current cost sharing arrangement provides for roughly a 50/50 sharing of costs between DOE and the Contractor, CONOCO Coal Development Company (CONOCO). The Corporation could assume this 50/50 arrangement and remain within the 60 percent limitation on Corporation module cost shares imposed by Section 136(a). However, $158 million of the project cost was to be used by DOE for project support costs and contingency funds. It is unclear how the Corporation would apportion and treat various elements of the project costs not currently included in the 50/50 cost sharing arrangement. Should inclusion of these costs result in the Corporation facing a cost share in excess of 60% of estimated total module costs, alterations to the cost sharing arrangement would be necessary to the extent of the excess.

The project management arrangement is similar to that established in the ICGG demonstration project, including the use on the project of the U. S. Army Corps of Engineers. Consequently, it is possible that due to the requirements of Section 136(f), some restructuring, as discussed above, of this arrangement might have to occur, should the Corporation seek to undertake this project.

Under the terms of the current Insurance and Indemnity provisions, in this agreement, DOE is obligated to reimburse the industrial partner for uninsured liabilities under specified circumstances. As previously discussed, such a provision might result in an improper obligation of Corporation funds beyond its contractual commitment to contribute capital to the project and could exceed the 60 percent limit on Corporation cost sharing per module. To this extent, some restructuring of the agreement would be necessary to ensure compliance with Section 136(f).

Operation of the plant is scheduled for a 42 month period and may be extended under certain circumstances. Following this phase of the project, negotiations will be held between DOE and the industrial partner. The Corporation could undertake the 42 month operations schedule and remain in compliance with Section 136(c). Disposition terms would, of course, be subject to the five year limit imposed by that Section.

5. Memphis Plant

The Memphis plant could qualify as a synthetic fuel project module under Section 136(d)(i)(A) because it is intended to demonstrate the technical and economic feasibility of the commercial production of synthetic fuels. The objective of this project, which is a joint effort of the Department of Energy and the Memphis Light, Gas and Water Division (MLGW), is to design, construct, operate, and evaluate an industrial fuel gas demonstration plant in Memphis, Tennessee, based on the "U-GAS" process of converting coal to a medium BTU fuel gas to demonstrate its commercial viability.

Although DOE has termed the plant to be of "commercial scale" which, according to DOE, differs from other commercial plants only in the test and evaluation nature of the operations period, this determination does not bind the Corporation to a decision that the Memphis plant is commercially viable for purposes of issuing financial assistance. As previously discussed, Section 131(p) prohibits the Corporation from awarding joint venture financial assistance unless the Board of Directors determines that neither price guarantees, purchase agreements, nor loan guarantees would adequately support the project. Should the Corporation determine that the project is commercially viable, issuance of one of these preferred forms of financial assistance would be appropriate. Were the Corporation to determine that this project is not commercially viable, its consideration of financial assistance in the form of cost sharing under Section 136 would be appropriate.

Because the ESA does not provide size dimensions by which a "module" might be compared to a "project" for the purpose of Section 136 (d)(i)(A)(i), it is unclear whether the Corporation would consider this undertaking to be "smaller" than a "project" defined by Section 112(18)(A). It would be inappropriate to assume that DOE's designation of this undertaking as a commercial scale project binds the Corporation to a determination that the undertaking is a "project" and not a "module" for purposes of Section 136. The ESA also does not define the factors involved in "expanding" a module into a project for the purpose of Section 136(d)(i)(A)(iii). Identification of these factors and a determination of what constitutes expansion under this provision should be conducted by the Corporation Board of Directors.

The structure of the current DOE cost sharing agreement for this demonstration plant could not qualify for Corporation cost sharing due to the restriction of Section 136 (a) which limits Corporation cost shares to 60 percent of the estimated cost of a project module. The current total estimated project cost is $814 million. The industrial participant is obligated to pay $100 million of this cost while DOE is obligated to pay $714 million.

Without additional information, it is unclear whether the City of Memphis Light, Gas and Water Division (MLGW) meets the definition of "person" provided in Section 112(12). Section 136(d)(2) may be interpreted as restricting Corporation participation to joint ventures in which persons participate. Section 112(12) defines "person" to mean, inter alia, "an entity formed for a "common business purpose." As a municipality, the City of Memphis may or may not meet this definition. However, because the Act offers no indication of what constitutes an "entity formed for a common business purpose," it would not be difficult in our view for the Corporation's Board of Directors to determine that MLGW constitutes such an entity. Moreover, the language of Section 136 indicates that the Corporation may nonetheless participate in a joint venture with entities such as MLGW insofar as those entities may constiture concerns under Section 112(3)(B). Sections 136(a) and (c) clearly evidence a legislative intent that a "concern" may be selected as a participant in a joint venture in which the Corporation participates.

As in the other DOE demonstration projects, it appears that DOE has retained primary management responsibility due to its ultimate control over the project. For purposes of complying with the restrictions on any Corporation management role in a cost sharing venture, it appears that some restructuring of this arrangement is necessary. A problem peculiar to this undertaking is the possibility that the Section 136(f)(2) prohibition against SFC's denial of primary management responsibility to persons in the joint venture could not literally be fulfilled in the event the Corporation Board declined to classify MLGW as a person. However, because Section 136 indicates a legislative intent to allow joint ventures by the Corporation and one or more concerns, Section 136(f)(2) could be interpreted to refer to concerns as well as persons should this interpretation be necessary to accomplish the Act's prupose and fulfill the legislative intent. In any event, the Corporation must establish certain project management activities to assure that this project will be properly conducted within prescribed costs.

As in the other demonstration projects, DOE faces certain contingent liabilities under the Insurance and Indemnity provisions of the current agreement with MLGW. The Corporation could not undertake these liabilities to the extent they would result in a Corporation cost share in excess of 60 percent of the estimated cost.

The plant disposition formula under the current DOE agreement calls for DOE to maintain an interest in the plant over a twenty-seven year period. As previously pointed out, Section 136(c) limits the Corporation's participation in a cost sharing venture to five years from the date of operation. Consequently the disposition arrangement would need restructuring in the event the Corporation were to participate in this project.

It is our opinion that the fossil fuel demonstration projects discussed above could, with certain modifications to the current DOE cost sharing agreements, be eligible for Synthetic Fuels Corporation financial assistance through Corporation joint venture participation, and possibly other forms of Corporation assistance upon a determination by the Corporation's Board of Directors that a given project is commercially viable.

DEGREE OF COMPLETION

Senator McCLURE. Leaving that question because we won't resolve it here this morning, what degree of completion are both of these projects?

Mr. LEGASSIE. They are in the very early stages of design, sir, in both cases, a similar status. We, in fact, started design about a year ago. There are two stages in the design. There is first the process design in which you attempt to lay out the process flow. And then, from that, there is a detailed design which eventually leads to construction drawings, piping diagrams, and so on.

We have completed about 20 percent at most of the process design. Therefore, about 10 percent of the total design effort that is presently conceived would be necessary so that the plant could be built.

There is a problem that is emerging in the course of doing this design—namely, that as we have done it, we have found that the projects are somewhat more complex than we initially visualized. This has resulted first in lengthening of the project schedules which has cost implications because of the longer period of time and associated inflation.

Second, we have found that we have omitted in our earlier thinking things that the process design now reveals are required. And this also introduces a cost increase.

So in both cases, we are looking at very substantial cost increases that have been identified now with about one-fifth of the process design and 10 percent of the total design. This is leading to considerable concern on our part that the continuing design process will reveal still additional items of this character; therefore, we do not have a good handle on the ultimate cost of these plants at this moment. This, of course, can be compensated for by providing an adequate contingency estimate which is the way you deal with uncertainty.

The track record is suggesting that the historic levels of contingency we have been using are probably inadequate in size, and would need to be increased if we were to come forward with a new formal cost estimate.

SRC COST ESTIMATES

Senator McCLURE. You have no cost estimate now?

Mr. LEGASSIE. The official cost estimates are still those that were essentially prepared in late 1979 in both projects, and I have furnished to you in correspondence a summary of the revised information we have received from both contractors which indicates substantial increases. In fact, ICRC, the contractor for SRC–I, then followed that communication with a press release of their own in which they put forth even larger numbers than they had originally given us in January of this year.

However, I cannot say to you that I recommend the contractor's estimates as being an appropriate Government cost estimate at this point. I can only inform you of the information we have, and the fact that it is still under review.

As I have said in the material that I sent to you, I have made three judgments.

The first was that the contingency numbers that are there are inadequate. And I have not hedged them at all. That is my view; they would need to be raised.

I have indicated that the schedules need further review. So there, I am not saying that the schedules are inadequate, but I am still not completely comfortable with them and want to look at them further.

And third, because of these cost increases in both projects, we studied the possibility of down-sizing the plants in order to bring the costs back under control. We asked if perhaps we could build a 3,000-ton-a-day plant and in that way prevent this large cost growth from impacting Government expenditures. The conclusions of those studies for both projects are that a down-size plant, at least in the framework in which the project was originally conceived, is not interesting.

Senator McCLURE. Could I ask this for the record at this point: The original cost estimate at the time the SRC-I was authorized?

Mr. LEGASSIE. Well, the very first cost estimate was in the neighborhood of $625 million. This was when we had done only a conceptual design. And, in fact, we were supporting this project with Government money at that time. So we should go back there.

And there was a similar number for both projects, in that neighborhood. And I will, of course, provide the specific number which I don't have in my head, but that is approximately it.

[The information follows:]

SRC PROJECTS

The cost estimates of the SRC-I project from program inception to date are as follows: The first column represents the estimate previously submitted to the Congress and the second column identifies the contingency contained in that estimate. The third column is the latest industrial partner's estimate and the fourth column identifies the contingency contained in that estimate.

SRC–I

[Millions of dollars]

	December 1979 estimate[1]	December 1979 contingency	April 1981 estimate[2 3]	April 1981 contingency[4]
Phase I—design	129	15	292	26
Phase II—construction	1,103	221	1,537	199
Phase IIIA—start-up	126	25	118	0
Preoperational subtotal	1,358	261	1,947	225
Phase IIIB—2 years operation	189	0	401	0
Phase IIIC—3 years operation	286	0	739	0
Coal costs	324	0	813	0
Operational subtotal	799	0	1,953	0
Supporting R. & D	132	0	[5] 0	0
Total costs	2,289	261	3,900	0
Potential revenues (5 years)	(801)	0	(2,456)	0
Potential net costs	1,488	261	1,354	225

[1] Current year dollars except for phases IIIB, IIIC, coal cost, and potential revenues which contain no escalation and are expressed in constant 1979 dollars. Phases I, II, and IIIA are escalated at 10 percent per year for fiscal year 1979 and fiscal year 1980 and 9 percent per year thereafter. It should be noted that estimates prior to fiscal year 1979 were very preliminary without the benefit of conceptual design.

[2] Supplied by ICRC, no DOE analysis and no DOE costs included. All phases including coal costs and revenues have been escalated at 10 percent per year.

[3] Mechanical completion is estimated to be September 1984. Adequacy of this date is still under DOE review.

[4] DOE believes these contingency amounts to be inadequate in light of the still early stage of design.

[5] Does not include $173 million for related DOE R. & D. support costs.

The cost estimates of the SRC–II project from program inception to date are as follows: The first two columns represent the estimate previously provided to the Congress. The first column includes contingencies and the second column has the contingency listed separate from the estimate. The next two columns present the latest industrial partner's estimate with the associated contingency separated.

SRC–II

[Millions of dollars]

	October 1979 estimate 6,000 TPCD[1]	October 1979 contingency	February 1981 estimate 6,000 TPSD[2]	February 1981 contingency[3]
Phase I—design	34	18	292	0
Phase II—construction	981	179	1,415	202
Phase IIIA—start-up	193	17	286	22
Preoperational subtotal	1,308	214	1,993	224
Phase IIIB—2 years operation	130	13	347	19
Phase IIIC—3 years operation	164	4	495	5
Coal costs	198	0	395	0
Operational subtotal	492	17	1,237	24
Supporting R. & D.	150		150	
Total costs	1,950		3,380	
Potential revenues (5 years)	(511)		(1,830)	
Potential net costs	1,439		1,550	
Total contingency		31		248

[1] Current year dollars except for phases IIIB, IIIC, coal cost, and potential revenues which contain no escalation and are in 1979 constant dollars. It should be noted that estimates prior to fiscal year 1979 were very preliminary without the benefit of conceptual design.

[2] Supplied by SRC International, no DOE analysis and no DOE costs included. Current year dollars at 10 percent per year inflation except potential revenues which escalate at 13 percent per year. The 6,000 tons per stream day represents 90 percent of stream-day capacity. This is equivalent to October 1979 estimate of 6,000 tons per calendar day. Mechanical completion moved from November 1984 to December 1985. Adequacy of this date estimate is still under DOE review.

[3] DOE believes these contingency amounts to be inadequate in light of the still early stage of design.

PROJECT COST AUTHORIZATION

Senator McClure. And at the time they were authorized?

Mr. LeGassie. Then, we came to our formal cost estimates of December 1979. And there, the cost estimates are, for SRC–I, $1.462 billion, which I must say for completeness includes an estimate of revenues to be earned during the operating life of the plant. So that is a net cost number which needs to be understood.

And in addition to that, there would have been something like $173 million of R. & D. and Department of Energy support costs separate from the project itself.

Senator McClure. But now, separate from the project cost authorization, but attributable to the project?

Mr. LeGassie. Yes, associated with the existence of the project.

Senator McClure. $179 million?

Mr. LeGassie. $173 million.

Senator McClure. So that at that time, there would have been something on the order of——

Mr. LeGassie. The sum of those two figures. So that is $1.6 billion approximately.

Senator McClure. A little over $1.6 billion.

Mr. LeGassie. Right.

And in the case of SRC–II, the comparable number is $1.439 billion. That number also includes potential revenues from a 5-year period of operation following construction. But in that case, the supporting research and development costs are included in the figure.

Senator McClure. So that is a total figure?

Mr. LeGassie. That is a total figure. And just for convenience of looking at them, the amount of that supporting R. & D. was $150 million.

So I would say that both estimates were similar in magnitude.

Now, of course, not all of these are Government costs. These are the project costs. And in the case of SRC–I, there were contributions which would offset that cost anticipated from the State of Kentucky and from the contractor, ICRC. I believe the numbers are about $30 million from the State of Kentucky and about $90 million from ICRC.

In the case of SRC–II, the costs we are talking about would be offset by contributions from the Federal Republic of Germany and Japan; approximately one-quarter of those costs in each case. So the two governments would be contributing half the cost, and the U.S. Government the other half.

Senator McClure. Is that a fixed percentage or fixed dollar contribution?

Mr. LeGassie. It is a fixed percentage in the international agreement. That is 25 percent of the project costs. But it is capped in that the international agreements say that the costs shall not exceed $1.439 billion unless all of the partners agree to that or make other provisions in the case of cost overruns.

Senator McClure. Now, I recognize that you do not now have a cost estimate that you are comfortable with, but you have indicated that you are satisfied that there will be a substantial additional cost.

Mr. LeGassie. Yes; my concern is only that one might add to the contractor estimates, not that one would subtract from them. So we can look at what the contractors have told us as already certain with respect to cost increases.

And the question I am raising is whether there is more in addition to that. So in the case of SRC–I, I need to have a short discussion with you before going to the figures.

In both cases, the contractors have come to us and proposed a revision in the philosophy of presentation of the cost estimate. We previously said in our December 1979, approach that we should escalate and provide for inflation for the costs of design, construction, and startup of the plant. And that, of course, is also done in the new cost estimate. But when we looked at the operating period, the judgment was that one is even further into the future. The costs of par value products from the plants are rather uncertain with respect to that far-off period of time.

Further, our analysis was that the costs of operating the plant and the probable amount of material that could be produced and resold were similar in dollar value. And in our minds, we said that that was probably a wash. In other words, if we could get the plant into operation, we could probably pay the out-of-pocket expenses of running the plant by selling some of the material it made.

So while we put down specific dollar estimates for both the costs and revenues of the operating period, we did not inflate them because of the fact that they were quite far out in the future. And, in fact, the numbers we wrote down led to essentially a net zero.

So that the $1.462 billion and the $1.439 billion are essentially the costs of design, construction, and startup, even though we talk about a net figure, and we talk about an operating period.

In these new estimates, the contractors have proposed that we escalate the costs of operation and that we also escalate the value of the assumed revenues from the sale of products. In the calculations they have now presented, there is a large profit or revenue stream associated with the operating period which, of course, may or may not be real. To obtain that, you have to be able to run the plant at a substantial operating capacity. And we must remember this is the first-of-a-kind demonstration plant. So we might have considerable difficulty getting it into operation.

In the case of the H-coal pilot plant that is now in our program, we are still not able to run that plant routinely and reliably to make a product. And we have been working on that for a year now.

Nevertheless, the estimates that were made contained some rather healthy assumptions about how quickly this plant gets into operation, how much product it makes, and what the value those products will be in 1985, 1988, and so on, on the commercial market. Consequently, the estimates reflect very large revenue streams.

The net cost estimate that the contractors have presented us is not very different from the $1.5 billion of the original net cost estimate. But if we focus on the costs that we are certain about, that is, those that occur in phases 1, 2, and 3A, and the costs of running a plant such as SRC–I, then what we see is a $1.4 billion construction cost plus an operating cost of about $800 million for a total expenditure of about $2.2 billion which has now gone up to an estimated number of about $4.4 billion.

So this is, indeed, a very substantial cost increase.

Senator McCLURE. Of the $4.4 billion, how much of that is the operating cost and how much of that is the initial construction cost escalation?

Mr. LEGASSIE. I will now use the figures recently published by ICRC reflecting an adjustment of their original numbers to us. And those numbers are divided as follows:

The costs through startup are $2.162 billion. And then, there are the additional costs of operation for 5 years including coal costs, are an additional $2.239 billion for a total of $4.401 billion.

They then estimate a revenue stream of $2.802 billion and, therefore, find a net cost of $1.599 billion.

If you then add the R. & D. and DOE support costs, which are now estimated at $175 million, they have a net cost of $1.772 billion which is indeed not far from the first net cost number we are looking at.

But this change in methodology and these assumptions about very large revenues are responsible for that final result. And in terms of cash flow, there is a requirement clearly for a much larger initial cash flow in this new estimate.

Further, this estimate contains a total contingency allowance which is on the order of relatively—I am looking at the table here and doing a mental calculation—I see a total contained contingency of $483 million.

Senator McClure. How much would you——

Mr. LeGassie. In $4.4 billion, that is a little more than 10 percent if you look at it that way.

Senator McClure. $483 million, was that the figure?

Mr. LeGassie. That is the contained contingency in these numbers. Given the fact that we just have gone through this experience of going from $750 million to $2 billion to $4 billion, a 10 or 15 percent contingency on that $4 billion seems to express a degree of assurance that I don't see reflected in the history of the project. The small amount of design that has been done and the large amount that is yet to be done would also tend to reduce the certainty of these estimates.

Senator McClure. Let me ask this question at this point because it seems to me we need to put a couple of other reference points into the discussion. One is: when do we expect that SRC–I would be completed?

Mr. LeGassie. All right. The original estimates, as I recall, were for mechanical completion for both projects in 1975 or there abouts.

Senator McClure. 1985?

Mr. LeGassie. I mean 1985, obviously, yes.

Senator McClure. I didn't think we had slipped that much.

Mr. LeGassie. I have some schedule data in front of me and will be as precise as possible here. This was a February, 1980, estimate which is obviously the end of 1979 estimate, perhaps with some adjustment.

It shows the completion of construction as being September 1984, and then in April of this—well, actually January of this year, we received a revised schedule which showed the completion of construction—that is, phase 2—as being December 1984.

And then, it is my understanding that the ICRC press release now has lengthened this by about 2 years. So that the current estimate is about a 2-year delay from the original estimate.

The same situation exactly has occurred in SRC–II. So again, I want to stress that we are not seeing anything in SRC–I that is unique or different from SRC–II and vice versa. I think that is important because it is not a question of who the contractor is.

Certainly, the impression is that the problem, whatever it is, is related to our understanding of the technology and the nature of the plant that is necessary to develop the technology; not a particular project and a particular contractor.

Let me correct the record if necessary. I will repeat the information on the completion of phase 2 construction that went from September 1984, in our 1979–80 estimate to December 1984—that is the January information we received from the contractor—to a current estimate of December 1985, which is a 1-year change.

Senator McClure. Is that ICRC's estimate?

Mr. LeGassie. That is ICRC's.

Senator McClure. December 1985?

Mr. LeGassie. December 1985, is the result of ICRC's discussion with our Oak Ridge operations office. And I am not sure whether it is their estimate or whether it is an estimate that they have agreed upon with Oak Ridge. There is some question, because of the way they have phrased this material in the press release, whether they are fully standing behind this or saying that it is something they have agreed to with DOE staff.

I have to say that I am not ready to say that that is my estimate. The 2-year slip I referred to is, therefore a 2-year slippage even though this is a 1-year one that I have just described to you. That is seen when you look at the end of phase 3B, instead of at the end of phase 2, which is the completion of 2 years of operation. There, the dates are earlier—April 1986, and June 1987, and now June 1988.

So I think the difference between the slippage you see at the end of phase 2 and what you see at the end of phase 3B involves some redefinition and rethinking of the startup period. So the better test would be really at the completion of the operating period. And that is a 2-year slippage as I indicate.

Senator McClure. What was the price of assumption on product when this was first authorized?

Mr. LeGassie. I believe that was an estimate on the order of $20 a barrel or thereabouts for crude oil equivalent. SRC–I, of course, makes a solid product so that would have to be translated to the material that they would have been marketing. I will produce that for the record for you plus whatever information I have on the values that are assumed in the new revenue estimate.

That, of course, I clearly don't have in my head to talk to you about, but we can furnish it for the record.

[The information follows:]

SRC PROJECTS

The pricing assumptions used in determining the net cost of the SRC–I and SRC–II projects are as follows:

SRC–I

The April 1981 estimate uses Energy Information Administration oil price projections which are higher than the Air Products & Chemicals, Inc., projections used in the December 1979 estimate. A comparison of product pricing between the November 1979 estimate and the fiscal year 1983 estimate is shown as follows:

Product	December 1979 cost estimate			April 1981 cost estimate		
	Price[1]	Production rate[2]	Dollar value/hour	Price[1]	Production rate[2]	Dollar value/hour
Propane				6.25	93	581
Naphtha	4.95	714	3,536	8.05	961	7,736
Light fuel oil	4.34	1,795	7,782	6.94	1,097	7,613
Heavy fuel oil				6.01	275	1,653
SRC	3.77	1,590	5,992	5.00	1,407	7,035
Coke				[3]150	[4]7,554	

[1] 1985 price in 1980$/MMBtu.
[2] MMBtu/hour.
[3] 1985 price in 1980$/ton.
[4] LB/hour.

SRC-II

The current estimate of product revenues utilized 1980 price assumptions as follows:

1,000 Btu/SCF synthetic natural gas	$3.70/thousand standard cubic feet.
3.8 MMBtu/bbl propane	$19.96 barrel.
5.4 MMBtu/bbl naphtha	$38.00/barrel.
5.9 MMBtu/bbl light fuel oil	$40.00 barrel.
6.4 MMBtu/bbl heavy fuel oil	$36.00/barrel.

Based on the product slate proposed for demonstration plant, this averages out to $33.64/barrell on a fuel oil equivalent basis. These prices were escalated at 13 percent per year (that is, 3 percent real growth) to arrive at the latest revenue estimates.

INFLATION COSTS

Senator McCLURE. If you would please. Because we are talking about, then, in the original estimates, a startup in September 1984, and the 5-year period would run 1984 through 1989.

Mr. LEGASSIE. Yes.

Senator McCLURE. And that $20 barrel equivalent would have been the price over that period of time?

Mr. LEGASSIE. It was probably. We did not do either the costs or revenue estimates in inflated terms on the assumption that as the value of products increase, so would costs.

Senator McCLURE. But the costs are fixed in an earlier period when inflation is running rapidly.

Mr. LEGASSIE. No; costs, for example, include coal costs.

Senator McCLURE. I understand.

What proportion of the costs are capital costs and what part are moving-target operating costs?

Mr. LEGASSIE. These costs, we are making out-of-pocket comparisons now so there is no attempt in these calculations to recover the sunk capital. So we are looking strictly——

Senator McCLURE. I understand that.

Mr. LEGASSIE. At the labor it takes to run the plant, the cost of coals and chemicals you have to buy every year and so on, versus what you could sell; whatever product is produced in the demonstration period. And all of these, both the labor costs and the coal costs, would certainly increase. So that if the product values increase, they are offset by increases in the cost of producing those products.

Senator McClure. Is that calculation similar on both the SRC–I and SRC–II?

Mr. LeGassie. Yes; it is, except I must say that if you compare what we have, there really is a rather anomalous situation. I have personally examined the assumptions about SRC–II somewhat more closely because I had to discuss with foreign governments the operating capacity on-line time, quantities produced, and so on, that lay behind the SRC–II estimates.

But these are both 6,000-ton-a-day plants. And the question that is inherent in the estimates, I would indicate to you as follows: The SRC–II projections of revenues on an inflated base assuming a 13-percent-per-year inflation of revenue value is $1.830 billion; whereas the SRC–I estimate, which assumes 10 percent and therefore a lesser inflation elevation, assumes revenues of $2.546 billion according to their numbers which is the $2.8 billion figure that I gave you earlier.

So there is a large disparity in the revenue estimates of the two projects which I have not fully penetrated myself. I would say that because of my examination of the SRC–II basis in terms of product quantity and so on, that I am extremely leery of the larger estimate on SRC–I which I do not yet understand, but obviously am trying to educate myself on.

Senator McClure. I am a little perplexed. If we look at the uncertainty of costs—and I understand that you say that there is no expectation in that revenue stream of any capital recovery—how can we contemplate that the private sector is going to pick these projects up even under a Synthetic Fuels Corporation arrangement?

Mr. LeGassie. Well, if in fact these estimates are correct, then clearly the private sector could take this project and expand it to a commercial size project and expect to make money.

Senator McClure. You mean take it and gamble more?

Mr. LeGassie. Well, that is——

Senator McClure. Double your gamble on the expectation that the risk would be halved?

Mr. LeGassie. All right; but I agree with you that this is a very substantial risk, and I am not trying to down play that. I was responding, I thought, to the theoretical question whether there is conceivable economic value in this technology. And I think the answer is yes. That is, if in fact the costs of building this plant could be kept under control and if its products have the anticipated value at a commercial size, previous analyses indicate that this would be a viable undertaking.

But those "ifs" are very, very large.

Senator McClure. But those previous analyses understated the risk and overstated the opportunity.

Mr. LeGassie. Right.

Senator McClure. So I wouldn't be investing very much money based upon those previous analyses if I were out in the private sector looking for a place to put investments of capital with the expectation of return on that investment.

Mr. LEGASSIE. Of course, I am trying here not to say something that might reflect adversely on a situation in which one or the other or both projects actually made a proposal to the Synthetic Fuels Corporation.

Senator MCCLURE. I see that attempt, and it is a very good attempt. But anybody reading the record is going to come to their own conclusions based upon the facts, it seems. And I, too, must come to some conclusions as to whether or not the SRC alternative is a real alternative.

Mr. LEGASSIE. I think it is looking less viable every day, obviously. On the other hand, I am not at all persuaded that, for example, if we had not been talking about the SFC, that the previous decision to move from a 25-ton-a-day experience in this technology to 6,000-ton-a-day is not equally impacted by the same set of data.

Senator MCCLURE. I think there is no question of that.

Of costs to date, how much have the primary contractors and subcontractors contributed?

Mr. LEGASSIE. Well, you say "contributed," do you mean private sector investment?

Senator MCCLURE. Yes.

Mr. LEGASSIE. I would like to provide that for the record because there are some complicated transactions, particularly in SRC–II. There is intended in both projects to be a private sector contribution ultimately in the neighborhood of $100 million. But some of this contribution is in the form of previous expenditures such as previous R. & D. work done. Some of it is in the form of foregone fee on related activities. Some of it is in the form of contributions of land and so on.

Also, as in the case of SRC–II, there are some benefits that the contractor receives by virtue of arrangements he is making with the foreign and private sector participants to make available technology rights which are his property and for which he is receiving payment from them.

Therefore, these transactions are somewhat complicated. But it is clear that we are talking about $100 million or so at most in both cases from the private sector against projects that are in the billions.

Senator MCCLURE. If they are talking about fees foregone or contributions of technology, that would be the total contribution from those sources for the completion of the plant?

Mr. LEGASSIE. That's correct.

Senator MCCLURE. In other words, they are a one-time contribution, they might be figured in now, but they will not get larger over time and they would apply to the entire plant?

Mr. LEGASSIE. No; they have been negotiated now through the period of operation of the plant.

There are also other arrangements whereby the contractors have a right to an option, if you would, that if the plant is built and operated, they may purchase the demonstration plant from the U.S. Government at value and operate it further on their own behalf thereafter if they wish to do that.

There are also provisions that say if the technology is commercialized, there is sharing of the royalties by the U.S. Government.

So there are provisions whereby the U.S. Government costs could conceivably be returned from a very successful activity of commercialization of this technology. And we would share in the revenues obtained from future activities up to 2½ times our original contribution.

So there were attempts to negotiate a total commercialization view in this arrangement. But nevertheless, the end risks are very high.

Senator McCLURE. Would you provide for the record that detail on those?

Mr. LEGASSIE. I'm sorry, sir?

Senator McCLURE. Would you provide for the record the detail on the contributions to date and include in that as separate items those foregone fees or royalty payments or proprietary interest values that have been computed?

Mr. LEGASSIE. Yes; we will try to give you a summary of the features as negotiated and then the actual elements of that which have occurred to date.

[The information follows:]

SRC PROJECTS

The gross amount of private sector funding in the SRC projects is as follows:

SRC-1

ICRC	$90,000,000
Commonwealth of Kentucky	30,000,000
Total participant contributions	120,000,000

By the end of phase II (the construction phase), ICRC will participate in the costs of the project in the amount of $90 million. This will be contributed at the rate of $5 million annually during the first 6 years, with a $60 million cash contribution due 30 days prior to the end of phase II. Approximately the first 3 years' contributions will be "in kind." Some work under the contract is being performed by affiliates of ICRC, such as Wheelabrator-Frye, Inc., Air Products and Chemical, Inc., Rust Engineering Co., and Catalytic, Inc. ICRC has agreed under the cost-sharing proposal that, for certain specified work, no fee or profit payments to these affiliates will be considered allowable costs under the contract. DOE has agreed that ICRC may pay fees to those affiliates in an amount of approximately $7 million, which will be credited against ICRC's initial cost participation contributions. ICRC has also agreed that fee or profit payments to affiliates and subsidiaries for other work under the contract will be allowed only if it results from competitive subcontracts placed with DOE's prior consent or from subcontracts for supplies and services procured in accordance with the subsection of the Federal procurement regulations governing transfers between affiliates and subsidiaries. ICRC's next contribution to the project will be the land tentatively selected as the site for the plant, assuming that the site is deemed appropriate upon completion of DOE's National Environmental Policy Act process. The land, approximately 1,500 acres near Newman, Ky., is valued at about $8 million. ICRC would have credited against its contribution requirements the actual direct cost of acquiring the land. The balance of ICRC's contribution, approximately $75 million, would be in cash.

ICRC is also committed under the cost-sharing contract to seek additional cost participation in the project. If ICRC is able to increase the cost sharing by bringing in other participants, the contract provides that ICRC can thereby increase the amount of revenue incentive payments it receives from plant operations in phase III and the credits it receives toward purchase of the plant.

To show its support of the plant, the Commonwealth of Kentucky has indicated its intention to raise $30 million from the sale of bonds, secured by annual appropriation of approximately $3 million to coal severence tax revenues. The $30 million so raised would be provided to the project for the purchase of pollution control equipment. If ICRC purchases the plant at the end of the phase III, it would pay back the Commonwealth's contribution.

SRC-II

Industry joint venture	$20,500,000
Foreign participants	975,100,000
Total	995,600,000

The prime contractor, in addition to providing the basic technology package enabling the foreign governments to invest 50 percent of project costs, are contributing up to $100 million in technology, .land, and cash plus approximately $30 million in fee foregone so that only 53 percent of project costs (precost sharing) are paid for by the government rather than 100 percent.

Accordingly, DOE believes that the total cost-sharing package is reasonable considering all of the following:

The contractor invested $25 million of its own funds in developing SRC-II technology during the early phases of R. &*D.

Sale of the Gulf foreign patent and technology rights to its German and Japanese industrial partners will yield $60 million to Gulf but creation of the Joint Venture Co., is a prerequisite to DOE obtaining $634 million for the project from the governments of Japan and the Federal Republic of Germany.

The Joint Venture Co., will invest $25 million in cash and cash equivalents (land and additional R. & D.) in the project.

The Joint Venture Co., may invest up to $50 million more in the project during phase III operations by paying 50 percent of the cost of capital modifications which may be needed to achieve the plant operating objectives.

The Joint Venture Co., will receive no fee while performing the contract (estimated to be worth $30 million) and will devote substantial numbers of highly skilled technical personnel to the project.

If the project is not ultimately successful, despite the receipt of $60 million in payments for its foreign technology, Gulf could lose money through the combination of its monetary outlays and lost opportunities to utilize its personnel resources on other projects.

REVENUE ESTIMATES

Senator McCLURE. Now, you made some comment earlier about a revised estimate, not only of costs, but also of revenue stream. Did I remember correctly that that was based upon a tripling of product value?

Mr. LEGASSIE. Well, I am not certain how one should describe that. And I would like to provide the assumptions for the record to you in both cases on both the original revenue estimate and the current one that we have from the contractors.

Senator McCLURE. All right, if you would do that, I would appreciate it.

[The information follows:]

SRC-I AND SRC-II

Assumptions used by the sponsors in developing revenue estimates for SRC-I and SRC-II are as follows:

SRC-I—STREAM UTILIZATION FACTORS

	Energy Information Administration April 1981 estimate	Air Products and Chemicals, Inc. December 1979 estimate
Phase IIIA (startup)	6 months—50 percent.	0.
Phase IIIB (2 year operations)	1 year—65 percent. 1 year—75 percent.	6 months—50 percent. 1 year—62.5 perent. 6 months—75 percent.
Phase IIIC	3 year—90 percent.	6 months—80 perent. 1 year—82.5 percent 1 year—87.5 percent. 6 months—90 percent.
Excalation	Current year dollars—10 percent year.	Constant 1979 dollars.

SRC-II

The estimate of potential royalty income as proposed by the contractors used the following assumptions: a selling price of $45 per barrel of oil equivalent; royalty rate of 2½ percent of revenue; a plant life of 20 years; and royalty payments are made over a 5-year period (common commercial practice).

The differentials in SRC project price assumptions that were used in developing revenue estimates are as follows:

	SRC-I price per equivalent barrel of oil	SRC-II price per equivalent barrel of oil	Differential
Synthetic natural gas		$22.20	$22.20
Propane	$23.75	19.96	3.79
Naptha	43.47	38.00	5.47
Light fuel oil	40.96	40.00	.96
Heavy fuel oil	38.46	36.00	2.46
SRC	30.00		30.00
Coke	36.00		36.00

Note.—Prices are in 1980 dollars.

TRIPLED REVENUE ESTIMATES

Senator McClure. I am up against a little timeframe difficulty here because we are making decisions here today, tomorrows, and early next week.

Mr. LeGassie. Well, we will provide it promptly, but I can give you a part of the answer right now.

Senator McClure. Yes, sir.

Mr. LeGassie. The revenue estimates have, in fact, tripled. Now, what needs to be disentangled is that some of the tripling is associated with inflating those estimates whereas previously, they were presented on an uninflated basis.

And then, some of the change is associated with an increase in value over and beyond that.

So in the case of the SRC-II, an estimate was made that the value of crude oil increases at a rate of 3 percent a year above inflation, whatever inflation is. So in real terms, crude oil prices would increase 3 percent a year.

There are, obviously, different assumptions in SRC–I. So at first the revenue estimates have tripled, but I need to disentangle for you how much of that is inflation and in simple mathematics how much is real change in assumption.

Senator McCLURE. A second factor I would like to look at particularly with SRC–II in value of product in the revenue stream is the character of that product fed into the current energy market. The character of that product is different than crude oil.

Mr. LEGASSIE. Yes.

Senator McCLURE. And, therefore, would have a different value than crude oil.

Mr. LEGASSIE. Well, I think that is probably accounted for, sir, in that the product can be readily upgraded for use or can be sold directly as boiler fuel. The differentials associated with the difference in value are, indeed, accounted for in the calculation.

Senator McCLURE. Would you indicate what that is?

Mr. LEGASSIE. Yes.

Senator McCLURE. There are some who say that the value is less rather than greater.

Mr. LEGASSIE. It is, indeed. There is a reduced value either because one has a somewhat higher upgrading cost or because the value of boiler fuel is indeed somewhat below that. So my belief is that those aspects have been dealt with correctly and all related ultimately to a crude oil value.

And so the question is: What is the assumption about the value of crude oil? That is the thing to focus on.

Senator McCLURE. All right. You think the difference is between crude oil value and residual values?

Mr. LEGASSIE. Yes; I believe those in at least SRC–II have been dealt with appropriately. I haven't examined how the value of the solid material in SRC–I has been dealt with so, therefore, I am uncertain about that.

Senator McCLURE. There is an uncertainty about that, too, because it is a different fuel form.

Mr. LEGASSIE. Yes.

Senator McCLURE. And, therefore, whoever the purchaser would be would have to install different fuel-handling capabilities. And that is always a market uncertainty when a new product hits the market.

Mr. LEGASSIE. Another key question on SRC–I involves the time that this product becomes available in fact in the real world. Its current virtue is that it is a clean burning low sulfur material which could be used in an existing powerplant without requiring flue gas desulfurization to be installed to meet standards. If you get out to 1988 or 1990, how many such plants remain that have not in the interim been required to put flue gas desulfurization units on?

So whether this material has special value 10 years from now versus the value it has today, is a matter of judgment. There are indeed real uncertainties about the market value in the future. However, if that material could be bought today by a utility, I am sure they would be delighted to have it.

Senator McClure. If they have appropriate fuel-handling facilities to handle the fuel with this characteristic.

Mr. LeGassie. Yes.

Senator McClure. And if they are assured enough that the supply will be available at an assured price so that it would justify the installation of whatever different facility would be required in the handling and combustion of that fuel.

Mr. LeGassie. That's right. And that is, in fact, why the actual project as it is now being designed is not limited to a solid material. We have decided to produce a variety of products from SRC–I, some of which are liquid.

Senator McClure. Has that increased the cost in order to be able to change that product output?

Mr. LeGassie. I believe that it has caused some increase in costs to do that.

Senator McClure. Could you provide for the record some estimate of what that cost differential might be?

Mr. LeGassie. I will see if that is possible, sir.

Senator McClure. All right.

Mr. LeGassie. What we are doing is having a little more versatility. We are buying some versatility that certainly has some cost.

Senator McClure. If we are doing that, it would be fair to subtract that from the cost escalation, would it not?

Mr. LeGassie. Yes.

Well, in fact, we should reflect the sources of these cost increases. And I think some of them are indeed perfectly understandable. If there is a change in scope, we should recognize there is a change in scope and insert increment of cost associated with that. But I don't believe that is any significant contribution, to this large cost increase we are looking at.

Senator McClure. This technology was—I was going to say "developed," but perhaps "advanced" is a better way of stating it—at the Fort Lewis, Wash., and Wilsonville, Ala., pilot plants; is that correct?

Mr. LeGassie. Yes, sir.

Senator McClure. What was the capacity of those pilot plants?

Mr. LeGassie. As I recall, Wilsonville is about 6 tons a day, and Fort Lewis varies. We describe it officially, I think, as 25 to 50 tons a day, depending on the mode in which we are running it. But I would say I think Fort Lewis is essentially a 50-ton-a-day pilot plant.

Senator McClure. Isn't there a greater risk to go from plants of that size to 6,000 tons per day than if there were an intermediate step taken?

Mr. LeGassie. Indeed, that is so. And at the time this decision was taken, there were substantial special reviews made to try to assess whether that risk was unreasonable. It was a matter of significant study and perhaps even controversy inside the Department at the time. And a judgment was finally made that the risk was acceptable, and we proceeded.

So it is clear in hindsight that the risk was larger than that review revealed at the time.

Senator McClure. Now, I am guessing, but I think it may be an informed guess, that one of the reasons that the decision came out the way it did was the feeling of urgency to develop some alternative fuels.

Mr. LeGassie. That is correct. At that time, there were no mechanisms in place to advance a commercial synthetic fuels industry at all in the United States. Crude oil prices were much lower so economic incentives for private sector investment were rather low, certainly lower than they are today. And there was no Government mechanism then in place to move any of this technology toward large-scale experience.

Both of those factors have, of course, changed in the first 2 years quite significantly.

Senator McClure. Are there presently plants operating at intermediate range or a range greater than Fort Lewis and Wilsonville plants?

Mr. LeGassie. Yes; of course, there are commercial indirect coal liquefaction plants operating most particularly in South Africa on which very large-scale experience is being obtained. And that has supported proposals by a number of U.S. companies to bring that technology into the United States with the assistance of the Synthetic Fuels Corporation.

Senator McClure. That is primarily just SASOL, isn't it?

Mr. LeGassie. That is SASOL-type technology. But in addition to that, there is the so-called indirect liquefaction technology where you make synthesis gas from coal, and you recombine the synthesis gas into a liquid product.

H-COAL AND EDS

With respect to direct liquefaction which is the kind of technology SRC is, in addition to the pilot plants we referred to, we have two operating pilot plants today in the Department of Energy program. They are both in our fiscal 1982 budget. They are the H-coal pilot plant and the Exxon donor solvent pilot plant. Those plants are in the neighborhood of 200 tons of coal a day and are both operating today.

We are gaining actual experience in direct liquefaction technology through them. And, indeed, I believe there is a proposal before the Synthetic Fuels Corporation from those associated with the H-coal pilot plant to seek support for a commercial H-coal plant from the Synthetic Fuels Corporation.

Senator McClure. The normal process or the normal process if we weren't taking some gambles on technology would be to go from pilot plant to intermediate demonstration to larger demonstration to commercialization. Is that generally the evolution?

Mr. LeGassie. Yes, that's correct. In fact, in the experience of some private companies, as I understand it, if you do a very good job in designing, laying out, and planning the test program for something like a 200-ton-per-day facility, you can go directly from that facility to a commercial size plant without an intermediate stage.

To make that more specific for you, in the case of the coal gasification technology that Exxon is pursuing, they have made a decision to take the Exxon catalytic gasification process which we have developed and cofunded with Exxon, a relatively small process development unit, and commercialize that technology in Europe.

Their announced plans for doing that involve the construction of a 100-ton-a-day pilot plant in Europe to fully demonstrate to them everything that they would need to know before moving to a commercial plant. So their scenario is from a process development unit to a 100-ton-a-day plant and then commercialization.

Now, admittedly, we know more about how to scale up coal gasification than we do coal liquefaction. I have to make the record complete here in that the scale-up issues in the liquefaction area are less understood. And that is why it is now valuable for us to have Wilsonville which is 6 tons a day, Fort Lewis at 50, H-coal at 200 and EDS at 250.

At least one sponsor has, by his proposal to the SFC, indicated that he is ready to move from 200 ton a day to a commercial plant if he can get a loan guarantee price support kind of arrangement with the Government. That is an assessment of risk that he is making, and judgment may obviously differ on that.

Senator McCLURE. That is not only an assessment of risk, but an assessment to shift some of it to the taxpayer.

Mr. LEGASSIE. Well, certainly the idea of the Synthetic Fuels Corporation is that there is a shared risk. But in that case, there would be substantial equity money and profit equity money at risk as opposed to minimal amounts of private money at risk. So there is, indeed, a sharing under the idea of the SFC.

Senator McCLURE. Both the SRC–I and SRC–II were designed to demonstrate a commercial technology?

Mr. LEGASSIE. That was the intent of those projects.

Senator McCLURE. If a private enterprise were to build such a project without Federal participation at the cost you projected and the risk you have outlined, how expensive would the end product have to be to guarantee the enterprise a reasonable rate of return?

Mr. LEGASSIE. I don't quite know how to answer that question directly. I have to answer it indirectly. There were analyses made, and they are part of the record in terms of the phase zero deliverables of both of these projects. They have, to a degree, been updated in the intervening time period based on the November–December cost estimates which indicated that this development track was still a desirable and appropriate one. From a national standpoint, the cost estimates that we had then for making a coal liquid product by this technology reflected a significant cost advantage over the existing SASOL technology which otherwise might be employed in this country. This situation created an incentive to pursue an R. & D. program to achieve that benefit.

I think it is very clear that the private sector would not pursue this benefit on the same timetable that the Federal Government had been trying to pursue it through these demonstration projects if it had to do it entirely with private money. It would wait some longer period of time before moving into this very large scale.

The first targets of opportunity for the private sector are more likely to be in oil shale where the estimated cost of the product is believed to be less than it is for coal liquids or in medium-Btu coal gasification where there are quite a number of proposals; or even the high-Btu gas plant such as the ANR plant in North Dakota.

But there are, nevertheless, private companies who believe that, if they start now to build a coal liquids plant using SASOL technology and it becomes operational in 1990 or thereafter, the product of that plant could be competitive on the market. In that case, they are not talking about incurring a technical risk. And they have a good basis for their cost estimates because there is private experience elsewhere in the world about what it costs to build such a plant.

Senator McClure. What you are suggesting, of course, is that the risk element is less in SASOL.

Mr. LeGassie. Yes.

Senator McClure. Although the reason for going to the SRC–II technology in particular and perhaps less so on SRC–I is that they have the projection——

Mr. LeGassie. Yes.

Senator McClure [continuing]. For a more efficient production of those fuels.

EXXON DONOR SOLVENT PILOT PLANT

Mr. LeGassie. We still believe on the basis of even this experience, but taking into account the rather successful operation we appear to be having with the Exxon donor solvent pilot plant, that generically direct liquefaction technology still has substantial promise and potential and it should be pursued as part of the U.S. Government development program. Therefore, we have included within our technology base provisions for continuing activity in that area.

So the issue that is being discussed here is whether anybody is ready to move to scales above 100 tons a day, for example, which is the size of a unit we now have operating, or whether we need to first continue development efforts at that size or less than that size before trying to take the next very large steps.

Senator McClure. The SASOL process is in use, plants are built; we have not only the proof of the technology, but also can compute the economics of that operation.

Mr. LeGassie. Yes.

Senator McClure. And, therefore, the risk is low——

Mr. LeGassie. Yes.

Senator McClure [continuing]. Compared to a new technology in which we don't know whether the technology works or how efficiently it works or what the economics of that operation may be.

SASOL

Mr. LeGassie. Yes; but there could still be risk to the application of SASOL in the United States. For example, depending upon what type coal that was used as a feed for the process, one might need to take special efforts to assure that that process will work well on U.S. coal which is different.

Senator McClure. I think Kentucky is shipping some coal to South Africa for that test right now.

Mr. LeGassie. That's exactly the example I had in mind when I brought that up.

Additionally, since these plants have never been built in the United States, there is not an established environmental regulatory framework in place so that the sponsors of such a project don't know for certain yet what the United States will require in the way of environmental control technology.

Senator McClure. That risk is about the same with respect to either technology, however, is it not?

Mr. LeGassie. Yes; although it is again with the larger amount of experience from the South African situation that if we were to require certain things, there might be a better experience basis to be able to put them in place.

Senator McClure. There may be and certainly there is more than one reason for advancing the technology to convert solid fossil fuels into liquid fuels, one of which is the change in form. We have great demand for liquid fuels that cannot be substituted for by solid fuels.

For instance, you can put a liquid derived from coal in the tank of a mobile power source, automobiles and trucks, and things of that nature.

Mr. LeGassie. All of the analyses—and there have been many that try to look into the future—come to the conclusion that the availability of liquid products from a coal liquefaction technology is a critical future technology. One could say, "Well, we have oil shale, for example."

But the amount of annual production from oil shale that one can achieve is less than our liquid needs. So in order to get to a nonoil resource, assuming that there is a finite and depletable amount of oil that the world can have, to find a substitute for that which is based upon this depletable large resource, one either has to talk about coal liquids or one has to talk about conversion of most of our transportation system to an electricity driver. And then there are other large resources that can be used through the electricity route that could meet those needs.

USE OF HIGH-SULFUR COAL

Senator McClure. That kind of feeds into the question I was just going to ask, not directly, but partially. And that is that one of the other purposes for the projects we are undertaking is to convert a high-sulfur coal to an environmentally acceptable clean-burning synthetic fuel, one that is desulfurized. And this is a means by which we remove the sulfur before we put it into the combustion rather than trying to remove it from the gas stream following combustion; is that not correct?

Mr. LeGassie. Yes; this is another major objection. In using the U.S. coal resource which is abundant, we do not want to find that we are restricting the use of that resource to certain categories of coal which might be predominantly available in the West. This might cause us to lose the ability to use eastern coals which are high sulfur and have other kinds of unique characteristics. In addition, the infrastructure already exists in the East to supply that coal along with the market demand.

We need to distribute the consumption so that we have total use of our energy resources. So there is substantial concern about making certain that we have a capability to use eastern, high-sulfur coal, and not have it become a commodity which we can't send into the energy system.

Senator McCLURE. Are there other perhaps less expensive ways of utilizing high-sulfur coal in an environmentally acceptable way?

Mr. LEGASSIE. One then is talking about coal gasification.

Senator McCLURE. How about just stack gas cleanup?

Mr. LEGASSIE. Well, stack gas cleanup is a relatively expensive remedy and not a cheap remedy. But it is a technologically available remedy although it produces a certain level of sulfur emission.

We have within our fossil energy program and in private-sector activity a companion effort in other technologies which will allow the direct combustion of coal with less environmental impact. For example, the combined cycle concept for electric power consumption basically goes back to the idea of gasifying coal in such a way that we can manage the sulfur removal as part of that step.

The concept of fluid-bed technology utilizes the idea of removing sulfur during the combustion process through a mixture with dolomite and things of that kind.

The idea of fuel cells and MHD technologies also show promise of being able to produce less sulfur emission than existing EPA standards.

Senator McCLURE. MHD is primarily because it uses the fluidized bed combustion, isn't it?

Mr. LEGASSIE. Well, it is a question of hot gas cleanup which is dealing with finely ground coal in order to combust it and so on in order to get the very high temperatures. So one can work on the problem in making high-sulfur coal available to the market in a direct combustion route. One can work on that problem through coal gasification, and one can work on that problem through coal liquefaction. All three elements are in our program.

I think it is also worth saying again that no matter what we do to get a synthetic fuels industry off the ground in the year 2000 you will find that 90 percent of the coal that we would be using at that time would still be used in the form of direct combustion.

So that in the near term, the way to maximize the use of high-sulfur coal is to work on these direction combustion technologies. In the longer term, the way to maximize the capability to use high-sulfur coal is to work on things such as coal liquefaction.

But we better be doing something now because while that is a long way off, it is going to take a long time to get there.

Senator McCLURE. Which may be a way of saying there is a justified taxpayers' investment in the development of those long-term technologies as contrasted to a less likely commercial investment of those technologies promising short-term payoff.

Mr. LeGassie. That's correct.

Senator McClure. Senator Byrd?

Senator Byrd. Thank you, Mr. Chairman.

On March 20, the President submitted a deferral proposal affecting SRC–II in the amount of $205 million. In the explanatory justification, the administration stated as follows:

> Under the administration's synthetic fuels policy all funding for fossil energy demonstration projects currently being supported in the Department of Energy would be terminated. These and other advanced synthetic fuel technology projects will be considered by the Synthetic Fuels Corporation for support as less than full-sized synthetic fuel project modules. In the case of the SRC–II coal liquefaction plant, no rescission can be proposed until consultations with the international participants in this project have been completed. The construction funds appropriated in fiscal year 1981 and prior years are deferred pending completion of these consultations.
>
> This deferral of fiscal year 1981 and unobligated prior year construction funds will have no effect on the completion of the detailed design currently scheduled for completion in 1983 or the completion and final decision on required environmental impact statement for this project. Some construction phase activities (for example, long-lead procurement) will be delayed pending conclusion of international consultations and possible consideration of this project by the SFC.

Now, I repeat one sentence from the paragraphs I read:

> In the case of the SRC–II coal liquefaction plant, no rescission can be proposed until consultations with the international participants in this project have been completed.

I have heard some talk that there may be a rescission of $100 million proposed or at least considered in connection with SRC–II. Has the administration changed its position from that which is stated in the language I have just read, to wit, in the case of the SRC–II coal liquefaction plant, no rescission can be proposed until consultations with the international participants in this project have been completed?

Mr. LeGassie. I am not aware, Senator, of any plan to propose a rescission on SRC–II money in advance of seeing what the conclusions of the discussions between the three countries are. Those discussions are scheduled to occur on June 4 and 5.

I am aware that you indicated that you were reading from a document which proposed deferral of some $205 million. In subsequent discussions with the Office of Management and Budget, we discussed with them specific numerical project cost data available to us and reached an agreement in those discussions that the appropriate amount to seek deferral on is $100 million, not $205 million.

It is my understanding that the OMB plans to modify the document that you are looking at to change the number from $205 to $100 million, but that it would still be a deferral. It may be that they have moved forward since those discussions and perhaps that is where the $100 million came from.

Senator McClure. As a matter of fact, I might just add to the record that that has been done, and we have received that modification.

Mr. LeGassie. All right, but coming back to your original question, my reply is that there will be no further action taken in connection with these matters until the completion of the discussions in early June with the other governments. And then, whatever conclusions are reached, in those discussions, would be reflected in some appropriate budgetary request.

Senator BYRD. But as of now, and pending the meeting which will be held in June, early June, in Bonn, West Germany, there is no change in the administration's position? In other words, the administration does not advocate rescinding any money with respect to SRC–II?

Mr. LEGASSIE. If there is any such view, Senator, it has never been communicated to me. And I would expect to be aware of it. I am not.

Senator BYRD. All right. What is your position with respect to such a rescission at this time, a time which will occur prior to the June 4–5 meeting in Bonn, West Germany? Would you be opposed to such a rescission at this time under those circumstances?

Mr. LEGASSIE. If it were to be proposed to me, I would recommend against it on the basis of the considerations that I am aware of. There may be other considerations that I am not aware of. But the considerations that I have in mind would be that we have an agreement with the other countries as to how to proceed.

We have told them that we are making recommendations, suggestions, and proposals and we are seeking their concurrence in that course of action. I would not want to take some unilateral action prior to their response which would suggest that we are not attempting to proceed in concert with those countries in the decisionmaking process.

Senator BYRD. At the mid-April meeting in Tokyo, was it not agreed that any final decisions on funding for SRC–II would be deferred at least until the Bonn, West Germany, meeting in June?

Mr. LEGASSIE. Yes; although many matters were fully discussed in Tokyo such as options and alternatives, and outcomes identified and examined, the agreement was that the June meeting in Bonn would be the place where decisions would be made, no decisions were made in Tokyo.

Senator BYRD. If indeed there were a rescission of funds at this time, would that not amount to a breaking of our commitment to those international partners which was made in Tokyo in mid-April?

Mr. LEGASSIE. Well, I would not want to make a legal judgment which I believe that question might call for, but I would agree that it would make it quite awkward for me to carry out those discussions.

Senator BYRD. Do you know whether or not the State Department opposes a rescission of SRC–II funds at this time?

Mr. LEGASSIE. I am not aware that the State Department has been asked that question by anyone, and I don't know what position they might take if asked. Certainly, the general position of the State Department, which has fully participated in all these international discussions, is that the United States should operate in accordance with the international understandings that it has signed. And we are doing that.

We have in no way by any action we have yet taken behaved other than that.

Senator BYRD. So the general position of the State Department has been that the United States should live up to its agreement?

Mr. LEGASSIE. Yes, sir. And avoid unilateral action.

Senator BYRD. Is it not true that the DOE has instructed SRC International to prepare an estimate of what it would cost to finish the design phase?

Mr. LEGASSIE. Well, that is not quite accurate, sir. What we have instructed SRC International to do is to prepare a proposal which we plan to furnish to the other two governments which would be for the completion of what I will call a baselining effort.

The distinction I am making is that the costs of the design is now estimated. If we use the word "design," we are talking about phase 1, and that is a $292 million activity or essentially a $300 million activity. That would include the preparation of detailed construction drawings, piping diagrams, and all of those things.

But for a much smaller amount of money, one could do the process design, not the detailed construction design, that would give you a very sound basis for a cost estimate and an understanding of the actual complexity and likely real cost of the project if built. And one does need to fully prepare a construction drawing to get to that point.

We have asked for the preparation of a proposal for a baseline activity which would take about a year and would cost in the neighborhood of $60 to $80 million. That proposal is forthcoming from SRC International which will be made available to the other two countries and will be one of the matters to be examined and discussed at the meeting in Bonn.

Senator BYRD. The proposal for——

Mr. LEGASSIE. The preparation of——

Senator BYRD. Of a baseline?

Mr. LEGASSIE. A baselining effort, yes.

We all have to learn a new term so we can communicate with each other.

Senator BYRD. So that proposal will be discussed at Bonn?

Mr. LEGASSIE. Yes; that is on the agenda for discussion, and it is being prepared specifically for consideration at that meeting.

Senator BYRD. And it is that proposal which, if implemented, would provide the basis for a more concrete cost estimate a year down the road; is that what I am hearing?

Mr. LEGASSIE. That is correct, sir.

Senator BYRD. So all three governments are committed to review that proposal at the Bonn meeting?

Mr. LEGASSIE. Yes, sir.

Senator BYRD. Implicit in that agreement, then, is the fact that sufficient funds must be available to implement any such decision that comes out of that meeting?

Mr. LEGASSIE. If the other two governments were to indicate that that was their desired course of action, then in order for that to be done on a three-government cost-sharing basis, we would need to have some funds available to us that are not now shown in the 1982 budget. The source of those funds obviously could be some of the funds that are now in the 1981 budget and not necessary for expenditures during 1981.

So we would then have discussions with the Office of Management and Budget about the application of prior year funds to such a course of action if that were the strong desire of the other two governments.

I must say that this is only one option that is being looked at, and we don't know what the position of the other two governments would be on this idea. But you are correct in stating that in order to do this, if that is what the system believes should be done, we would have to identify a funding source for it and, obviously, would look to funds available from 1981 as an appropriate funding source.

Senator BYRD. Which would be the $100 million that——

Mr. LEGASSIE. Or some portion of it. Perhaps not necessarily the total amount.

Senator BYRD. Not necessarily the full amount?

Mr. LEGASSIE. But there is a possible utilization of funds in the 1981 budget which are under deferral now, not rescission.

Senator BYRD. Which will be under deferral ultimately.

Mr. LEGASSIE. Right.

Senator BYRD. Proposed to do under.

Mr. LEGASSIE. Right.

Senator BYRD. And do I understand that it would take about a year after the Bonn decision to go forward with the baselining effort if such a decision is reached before that action would be completed?

Mr. LEGASSIE. Yes; that was an estimate of the schedule at the time. I think we will see in the proposal that we are expecting shortly a more careful look at exactly how long. But I think for discussion purposes, we can think in terms of a completion of that activity in July 1982.

Senator BYRD. What is the estimated cost at this point?

Mr. LEGASSIE. There were informal cost estimates for this activity that ranged from $60 to $80 million.

Senator BYRD. For this activity, baselining activity?

Mr. LEGASSIE. For this baselining activity, yes.

Senator BYRD. What is the estimated cost of SRC–II as of now?

Mr. LEGASSIE. Well, we have a formal cost estimate which is the one we furnished the Congress and was based on our November 1979 data, this is the $1.439 billion estimate. I have subsequently furnished to you and to the committee later information that we have received from the contractors which reflects a revised cost estimate. This was given to us as part of the January baselining effort. Since it was actually received in early February, we call it the February 1981, estimate.

The net cost associated with that estimate is $1.550 billion. However, this net cost estimate comes in two pieces, one of which is a significant upward revision of the cost to construct, start up and operate the project, and the other an increase in the revenue estimate.

So that when you take the two larger numbers and subtract them, you still get a similar net number. But, in fact, the cost to be incurred prior to the acquisition of any revenues has risen substantially.

The Department of Energy has communicated this new cost estimate to the Congress, but indicated that it has not accepted that cost estimate. I am specifically concerned that the contingency estimates contained in it should be increased in my view and have so noted that in the material I sent. This material is still under review.

So I want to distinguish this information from any formal revised Department of Energy estimate. We do not have a replacement estimate for the $1.439 billion.

Senator BYRD. Getting back, then, to the talk of rescinding funds prior to the Bonn meeting, is it not very important if we are to maintain our credibility with other countries that have entered into agreements with us that no action be taken to rescind any portion of the funds for SRC–II at this point prior to the planned meeting and prior to the discussion of the baselining effort which, if agreed to and if launched, would require funds from the 1981 budget?

Mr. LEGASSIE. I believe that to be correct, sir. We have continuously maintained the position with our other two partners that we are not taking unilateral actions. This is particularly important when budgetary actions indicate that we would be ignoring the existence of an agreement which specifies in it that all decisions shall be made collectively by the three governments.

This matter was viewed as very sensitive at the time of the formulation of President Reagan's budget submission to the Congress. If you look at the so-called Stockman papers which were issued from the White House and specifically at those items that relate to the fossil energy demonstration plants, you will find a footnote that was added to that material as a result of very high-level discussions with Japanese officials which were conducted at that time. Specifically, it is noted that the budget proposal being made by the President recognizes the necessity of formal intergovernmental agreement before it could be implemented.

So we have taken very substantial steps up until now to be sure that our budgetary action was not leading the decision process with the other governments, but rather would be reflecting whatever those decisions were.

Senator BYRD. Thank you.

I think, Mr. Chairman, this has been a very able witness, and he has given to the subcommittee informed and objective answers. In my opinion, a good case has been made against any rescission of funds for SRC–II prior to the Bonn, West Germany meetings in early June.

Senator MCCLURE. Thank you, Senator Byrd.

Now, the wisdom and sagacity of a witness is usually measured in terms of whether or not it agrees with preconceived positions taken by the questioner. And it also helps having him ratify what you believe.

Senator BYRD. Well, may I say something, Mr. Chairman?

Senator MCCLURE. Of course.

Senator BYRD. I am not exactly new at this business of asking questions.

Senator MCCLURE. No, indeed.

Senator BYRD. And I don't pass out a compliment like this very often. I thank you for giving me a chance to say that for the record.

Senator McClure. Of course.

Mr. LeGassie. Thank you, sir.

Senator McClure. Did you, as a matter of fact, have consultations with Germany and Japan prior to sending up the budget deferral request?

Mr. LeGassie. The budget deferral request for $205 million was forwarded to the Congress without discussion with my part of the Department. So there was no opportunity for me to have discussions with the other two governments. This situation subsequently led to the discussion with OMB wherein we reached agreement that the appropriate number to defer was $100 million, not $205 million.

I was then able to say to the other two governments that the deferral request did not represent a reaching for funds which would interfere with the forward course of the project during fiscal 1981. If there had not been an agreement to modify the $205 million to $100 million, I could have had a problem in my discussions with the international side.

Senator McClure. How much will be spent out of the $205 million during fiscal 1981?

Mr. LeGassie. Well, our calculation was that we could require all of the funds in fiscal 1981 except for $100 million. And that is the basis on which the deferral was modified.

Senator McClure. What you are saying is that what you could require is not in excess of $105 million?

Mr. LeGassie. That's correct.

Well, let's see. If I remember, the fiscal 1981 request is $175 million.

Senator McClure. You have $205 million available; is that correct?

Mr. LeGassie. There is $175 million in fiscal 1981 and some $30 million carryover.

Senator McClure. So you have available $205 million?

Mr. LeGassie. That's right. And we actually need about $105 million of that. So that $100 million could be deferred without impacting activities this fiscal year.

Senator McClure. And $105 million could be rescinded without impacting activities in this year?

Mr. LeGassie. If it were rescinded, it would not be available for use. And the question is how it would be received by the other partners.

Senator McClure. That's not my question. My question was: It would not impact your activities in this fiscal year? And the answer is, of course, yes.

Mr. LeGassie. Could I have a small consultation with my budget expert here? And we will give you a better answer.

Senator McClure. Yes, sir.

Mr. LeGassie. I think it would be better, sir, if I gave you a reply for the record because we need to look carefully at the financial situation and also the——

Senator McClure. Mr. LeGassie, let me ask you——

Senator Byrd. Mr. Chairman, let him at least finish his sentence, if the chairman would allow me.

Senator McClure. Senator?

Senator Byrd. I would like to hear the rest of that sentence.

Senator McClure. We will get back to that in just a moment.

If as a matter of figuring you defer $100 million because you wouldn't spend it—you couldn't spend it if it were deferred—you would have available to you for expenditure in 1981 $105 million for expenditure under the deferral; is that correct?

Mr. LeGassie. I understand where you are leading me, sir, and one of the things that is holding my hand is the fact that there are situations in which we could be going through the fiscal year, and then into termination. This could cause additional budgetary requirements——

Senator McClure. I didn't ask the question about termination; I asked about activities.

Mr. LeGassie. But we need funding if we are in a termination situation——

Senator McClure. Of course, you always do.

Mr. LeGassie [continuing]. To pay for that.

Senator McClure. You always do. That isn't what I was asking you.

If I had coupled the request with a rescission and direction for termination, and that was the mode you were in, indeed, it would affect what happened. If as a matter of fact, you are talking about expenditure levels of money during fiscal year 1981 without a direction or a decision for termination, but an appropriation for fiscal 1982 to cover 1982 operations, whatever they may be——

Mr. LeGassie. Right, well, you are——

Senator McClure [continuing]. The effect of a deferral or a rescission on 1981 operations is identically the same?

Mr. LeGassie. All right, but that is an important element of the discussion.

Senator McClure. I understand that, but is the answer yes?

Mr. LeGassie. If you are saying to me, assume you are not in a termination situation, what funds do you require in fiscal 1981 to carry on the design activities and support activities associated with the project, our answer is $105 million of available funds. And so $100 million is not needed for those purposes. Right.

And if you tell me I don't need to make them available in 1981 for any other purposes such as termination, then, I would say I could do without those funds in 1981 absolutely.

Senator McClure. Well, you would be doing without those funds in 1981 absolutely under a deferral.

Mr. LeGassie. Yes; and also under a rescission.

Senator McClure. Yes.

Unless a decision is made to terminate, and if you are on the course that you are on, then I understand that course of negotiations with the other governments as well as internally within our own. You are looking to a level of 1982 activity which is yet undetermined, pending the meeting in Bonn.

Mr. LeGassie. There may be a requirement for 1982 funding which is not now present, because under one course of action, we might be doing a baselining effort which would require some funds. Under another course of activity, we might be engaged in a termination event which would require some funds. So my answer to you has to be in that full context.

Senator McClure. Yes, I understand that. The funding required in fiscal 1982 will depend upon the decisions that are made with respect to program scope and activity for 1982. And that is pending the outcome of the discussions with the other governments involved in the project.

Mr. LeGassie. But I believe that you are describing a different approach than the one that we had been proposing which was to say here are fiscal 1981 funds. We see zero in fiscal 1982.

We will make a determination of how much of those fiscal 1981 funds are in fact needed by deferring in the first instance the expenditure which we don't see as necessary during 1981, and then making a rescission request after we know how much of those might be needed to cover future year activities.

So it is a different premise. But I am not trying to argue with you that one is better than another. I am simply trying to communicate with you.

Senator McClure. Yes, I understand that.

You don't know, and we don't know, what the decision will be.

Mr. LeGassie. That's correct.

Senator McClure. For the record and officially, we have to assume that the question is open because it is going to be discussed. You have an agenda, an agenda for discussion, you have a number of options that will be discussed, and a decision will be made later. That is our Government's position at this time; is that not correct?

Mr. LeGassie. That is correct. I have to say that there is nothing inherent in what is done nor has a prejudgment been made as a requisite to representing the U.S. Government in fulfilling its obligations.

Senator McClure. I understand that you have to say that no decision on our part has been made. But we are not going to use the $100 million this year.

Mr. LeGassie. Well, it is clear that we do not need it in our present analysis. I would like to make that subject to confirmation of our current calculation of this year's needs which I will communicate to you within 24 hours. But our latest calculation was that $105 million would cover the activities for operating the project. It does not provide for some other things we might need.

Senator McClure. I understand that. And I don't know that it is really worth all this discussion because it doesn't really make that much difference on our 1981 rescission actions or deferral actions in the total aggregated budget authority or outlay for this year. The budget authority or outlays calculation for 1981 would be identical under either situation.

The question that we have to look at is the impact it will have on the 1982 budget and the out-year implications.

As I understand, you have indicated that the baseline study which is one of the options under discussion—I'm not sure whether you said baseline study——

Mr. LEGASSIE. I just called it the baselining effort.

Senator MCCLURE. The baselining effort. You cautioned me we had to learn some new terminology, and I am trying to learn it. The baseline effort that you have outlined is one of the items on the agenda for discussion and possible selection in that discussion would cost $60 to $80 million; is that correct?

Mr. LEGASSIE. Yes, sir.

Senator MCCLURE. Is that $60 to $80 million in addition to the $105 million program for 1981?

Mr. LEGASSIE. Some portion of it is. Obviously, some portion of it represents that which we would be doing in fiscal 1981 out of the $105 million. Some other portion of it reflects expenditures which would be incurred in 1982.

I must also say that there is always the possibility that something may be proposed in Bonn that might require expenditures in fiscal 1981 that we have not provided for in our $105 million estimate. So to that degree, of course, I am much more comfortable with a deferral situation which is what the OMB has requested so that funds are available.

Senator MCCLURE. You don't like to have to come back and seek more funding?

Mr. LEGASSIE. Obviously.

Senator MCCLURE. Congress is always a nuisance, but it is sometimes a necessary nuisance.

Mr. LEGASSIE. Actually, I consider Congress more of a blessing than a nuisance.

Senator MCCLURE. It is easier to seek a reprograming or redirection than it is to come up and get additional funding.

Mr. LEGASSIE. Yes, sir.

Senator BYRD. Also, isn't it true, Mr. Chairman, with the supplemental going forward now, that it would be too late to come back later in the year after the June meeting had occurred?

Senator MCCLURE. It is not too late for reprograming, and it is never too late for another supplemental. I have never seen it too late for a supplemental around here.

Mr. LEGASSIE. I have found in my experience that the Office of Management and Budget and even my own management in the Department of Energy are very reluctant to seek supplementals. They really have to be extraordinary matters.

But again, it is obviously not my purpose here to engage in certain kinds of discussions with you. I am trying to provide you information so that you can have those discussions among yourselves. And I think what I should say is that the evident posture of the administration here is to seek a deferral with the decision of seeking a rescission later.

Senator MCCLURE. I do recognize your problem, and I don't want to make it any worse. I am trying to get an understanding of the basic arguments. And again, I am not sure that the difference between the rescission and the deferral is worth an awful lot of our time with respect to the rescission package and the impact on the 1981 figures.

It does have an impact on the 1981 figures. But if the decision is made in Bonn or, let me put it this way, unless we change the conditions of the agreements between our governments, further funding, additional funding, will be necessary in fiscal 1982.

Mr. LeGassie. That is correct.

Senator McClure. And you would be back here after the meeting in Bonn asking for a supplemental.

Mr. LeGassie. Let me use an illustration to respond to your question. If the other governments say to the U.S. Government in Bonn, "We want to proceed with the construction of the project even at these higher cost estimates, and, therefore, we direct you, Mr. LeGassie, to return to your government and seek additional funding in fiscal 1982 to do that outside the Synthetic Fuels Corporation because we don't want to go there," then I would come back to the United States and have discussions with the Office of Management and Budget, my management, and we would consider two alternatives.

One would be to return to Congress and seek fiscal 1982 funds.

But the other alternative would be to take an action which we can take under the agreement which would be to formally terminate U.S. participation in the agreement. And that would not require additional funds in fiscal 1982 and would not require us to return to Congress.

Senator McClure. All I am trying to say is that after the meeting in Bonn——

Mr. LeGassie. Some courses of action might bring us back here, but there are other courses of action which would not.

Senator McClure. That's correct. And unless we change from where we are now—and where we are now is an agreement to build SRC–II?

Mr. LeGassie. Yes, unless we change——

Senator McClure. Unless we change from that, you will have to come back to the Congress after the Bonn meeting and ask for a supplemental?

Mr. LeGassie. Yes, but, in fact, we expect a change from that.

Senator McClure. Well, I understand that, but you resist the idea of expecting a change with respect to a rescission, but you don't resist the idea of expecting a change under a deferral. Now, Mr. LeGassie, that is highly illogical.

Mr. LeGassie. I think the point of logic on which I am standing, sir——

Senator McClure. Is OMB's directive.

Mr. LeGassie. No; I would not fall back on that. I say there is a point of logic, and the point is that the course of action we are now on will not require us to return to Congress and seek any funds in fiscal 1982. And you are describing a course of action which could require us to do that.

Senator McClure. But the course of action you are on requires one of two decisions in Bonn.

Mr. LeGassie. Yes, that's correct. Your understanding of the situation is correct. And I am not arguing about that.

Senator McClure. Either we go to the baseline effort in which the carry-over money would be sufficient to fund it or that you would reformulate the project for an application to the Synthetic Fuels Corporation.

Mr. LeGassie. Or we would terminate it.

Senator McClure. Or we would terminate it. So there are three options that would be available, but would not require you to come back and ask for additional funding.

Mr. LeGassie. That's correct.

Senator McClure. And the only one that would require you to come back and ask the Congress for additional funding is the current agreement between our governments?

Mr. LeGassie. Yes; which we have formally proposed to change.

Senator McClure. Now, are you aware of the action taken by the Bundestag informally or formally?

Mr. LeGassie. Well, I am aware of the fact that there have been significant cuts in the West German Government budget for research and development in energy and that those cuts have to be applied to specific programs in the German program. And so there has been for some time a question about the level of financial participation of the West German Government.

So I presume that that is the area that you are referring to.

Senator McClure. Yes, sir. I am just trying to make certain that our friends out in Morgantown and others who are interested in this project have as much information available to them as we have.

And I know that in diplomatic terms, it is very difficult to tell the people the truth, the whole truth, and nothing but the truth, in terms that they can understand.

The fact is the Bundestag in their discussions refused to appropriate the money necessary for them to go forward. And if the Bonn agreement does not reach an agreement different from that, they will not be going forward with the project on the current terms and conditions.

Mr. LeGassie. Well, my understanding from the German representatives that I have spoken to is that they have a total figure they must meet. And they have a number of projects, including SRC, which represent a requirement larger than their total R. & D. budget. Dr. Smith Kuester and his ministers inside the government have the power to decide how they apply that budget, what they fund, and what they don't fund. In addition, they have been seeking additional supplementary sources of money for these projects in the private sector of the German Republic.

So, what he has to do is to prepare a program within the funds that are available to him; he has some discretion with respect to what he funds and what he doesn't fund.

Senator McClure. They could well go along with the baseline effort?

Mr. LeGassie. Yes; or they could go along with some participation in a project if the project were to continue.

Senator McClure. If a project proposal were made to change the project scoping or to change the participation rates or to change it in some other significant way, in other words, we might be able to reformulate the program and come out with something?

Mr. LeGassie. That's correct. They are not cut off from participating in the SRC-II project. They have a funding problem that they have to deal with.

Senator McClure. I understand that. And again, I don't mean to be irresponsible. I don't mean to be argumentative. I do want to be accurate in what we are trying to say here today that we don't know what the outcome of that Bonn meeting will be. And while the Bundestag has taken the action that they have taken, the signals coming from the German Government are not formal at this point with respect to what options they have.

Mr. LeGassie. I personally have had detailed discussions with the German representatives, about their financial situation and their ability to participate. And again, the final judgment on that will come out of the June discussion.

But the participants at the meeting have the ability to make decisions within available funding limits which go beyond this project. So there is not a foreordained result because of the current budget situation.

Senator McClure. But the current budget situation would not permit the project to go forward as now scheduled.

Mr. LeGassie. For example, if the Germans could say that we need to reduce our participation in SRC from 25 to 15 percent, and the Japanese could say, "Fine, we will increase ours from 25 to 35 percent," the project could go forward. However, I don't consider that to be a likely event.

Senator McClure. But my question was that we know from what action the Bundestag has taken that the project cannot go forward as it is now scheduled unless the Bundestag changes their action.

Mr. LeGassie. I think that is a fair statement because not only has the Bundestag taken action to reduce the total funding available to this part of the ministry, but in addition to that, there are increases in project costs. The fact is that the international agreement presently states that the project cannot cost more than $1.439 billion and the current estimate that we have from the contractor is in excess of that. So something has to happen there also.

Senator McClure. As I understood, their 25 percent participation had a cap on it.

Mr. LeGassie. That's correct.

Senator McClure. But the cost escalation, therefore, does not affect the German share nor the Japanese share; it only affects our share.

Mr. LeGassie. No; it affects all three. The way the agreement is written reflects really two statements. First, that the participation will be 25 percent of the project cost. The second statement is that the project will not cost more than $1.439 billion.

Then, you go to some other parts of the statement that say, "Well, suppose the project estimate goes above the $1.439 billion?" And given those first two statements, what happens?

There are a series of contingency scenarios laid out which allow people to say things like, "Fine, the project can proceed at $2 billion, but I am still not going to pay more than 25 percent of $1.439 billion ." Or a lot of people could withdraw from the project or take other action.

So there are a series of remedies to an impossible set of limitations. So there are caps, but then there are provisions for dealing with situations in which those caps are reached and must be exceeded.

EXXON DONOR SOLVENT PLANT

Senator McCLURE. Moving to other liquefaction projects, you have requested $30 million in fiscal 1982 for operation of the donor solvent pilot project. At the same time, you indicate that you will present this proposed funding level which is a reduction from the 1981 level to the project sponsors to determine if they will provide the additional necessary funds.

What happens if they don't?

Mr. LEGASSIE. There are variety of possibilities. Since we have a 50-percent share in this project and it is jointly managed, others may vote a program that reflects our funding, but which differs from the program we have in mind. In those circumstances, if it is a 50–50 vote, then the Exxon management is empowered to make the final decision on the program content in the case of a tie.

If that happens and we don't like the program, we have the power to withdraw completely from the agreement or we could accept what would then be the result of the established process for arriving at a conclusion.

So we will first go through a process of attempting to seek consensus. That is where you don't have a 50–50 split of judgment. And if we are successful, fine. If we are unable to do that, then presumably there will be two positions. We will have one, and everybody else will have another. Exxon will break that tie in some way, and we will like the result or we won't. Our choice will be to stay in or to pull out.

So in very broad terms, that is the scenario.

Senator McCLURE. And you could choose to stay in at a reduced level?

Mr. LEGASSIE. Yes; we could in the donor solvent project.

H-COAL PLANT

Senator McCLURE. In the Ebullated-bed, H-coal, pilot project, what activities will the fiscal year 1982 budget request of $20 million support?

Mr. LEGASSIE. We believe that that will fund us through basically two runs with two different coals; the first of which we are attempting to have now. Whether or not we accomplish this will depend upon our ability to accomplish the first run. The present situation is that we are still trying to come out of a break-in period which we have started and found an equipment failure, a design deficiency. We had to shut down to replace the valve or the heat exchangers, and then try again.

Now, our recent experience is suggesting to us that we are emerging finally from that break-in period and I am now optimistic that we are essentially through it. We should be able to have a good run with the first coal and be able to move on schedule with a run of the second coal at which point we would say that an adequate amount of data has been developed to allow a judgment to be made by the private sector as to whether or not to pursue that technolgy further.

That is a program that is less extensive than was earlier conceived, but in our view, it is adequate. It should be noted that this is an expensive plant to keep in operation.

So we are still satisfied with the budget proposal that we have made that calls for the expenditure of $20 million in 1982 and then shut down.

Senator McCLURE. How long into 1982 would that run as contrasted to continuing it running throughout the entire fiscal year?

Mr. LEGASSIE. That would call for termination of that final run in the March–April timeframe, allowing a 6-months period for shutdown of the plant and necessary followup activities and so on. So that means that the plant will only run for about half of fiscal 1982.

Senator McCLURE. If it were to run for all of fiscal 1982, what would the costs be to the Government?

Mr. LEGASSIE. My staff tells me that an additional $20 million or thereabouts would be required.

Senator McCLURE. But the original request was $57 million. That was reduced to $20 million. I was wondering if that $37 million was the difference you indicate maybe $20 million would be.

Mr. LEGASSIE. Well, I am hearing that $20 million would be adequate to keep that in operation for a longer period of time in 1982. But again, we certainly would not support the position that it should be done, sir.

Senator McCLURE. I understand.

On page 45, $5.4 million is allocated to Rockwell International for pyrolysis work. These funds are to be used in fiscal year 1982 to support pilot plant operations, engineering studies for a commercial plant, and assessment of raw products to be refined from such a point. How can funding of these activities be reconciled with a shift away from Government involvement in pilot plant and commercialization operations? And why is no mention made here of a projected phaseout of DOE involvement in these operations?

Mr. LEGASSIE. I think it is a question of scale, sir. We are interested in proceeding with examining certain kinds of activities at a process development unit on a small scale. We wouldn't call that a pilot plant in the same sense that we call a 200-ton-a-day unit like EDS or H-coal pilot plant or even a 50-ton-a-day plant like Fort Lewis as a pilot plant. I think it is a question of terminology as to what a pilot plant is.

The activities that we are proceeding with in our technology base program—back to the very first table that I showed you—reflects what we consider to be the large-scale pilot plant activities. And everything else in our budget is of a modest scale and we think appropriate in terms of looking at second and third generation technology.

So we have in some cases used the terminology of process development units for small kinds of things. For other kind of technology, someone might still use the phrase pilot plant, but we are still talking about a very small, exploratory kind of applied development, still many, many factors away from commercial size.

So I guess I am saying, "Don't let the words put you off here, sir." This is not the kind of activity that is reflected in these other things that we properly think the Government should be out of.

Senator McCLURE. Well, I am struggling a little bit to understand the logic that applies to some because decisions are made in some instances to get out of R. & D. and in other instances to stay in R. & D.

Mr. LEGASSIE. We have tried to look at this informally rather than be arbitrary and say we will do this and won't do that. We have tried to have a philosophic approach and say when it gets above this kind of size, then we should not be in it. And we have applied that uniformly.

Senator McCLURE. It is a size question?

Mr. LEGASSIE. It is a size question.

One way we can see that size question is in the area of what is the annual cost. So, for example, if we are talking about annual costs of $40 million or so in Fort Lewis, Exxon——

Senator McCLURE. That puzzles me just a little. It troubles me just a little because I think all of our experience indicates we go from a very small laboratory type of experiment into a sized R. & D. program that is somewhat above it. We may be talking about 5 or 6 tons a day, for instance, in some of these coals. Then, we say we must scale that up to maybe 100 tons a day, and we must scale it up again in a demonstration program, maybe 600 tons a day.

Then, we go to a demonstration project on the basis of 6,000 tons, and then we go into full-scale commercialization. You are telling me only at the first level or so would the Government be directly involved. All the rest of the levels will be left to the private sector.

Mr. LEGASSIE. Not quite, sir.

Senator McCLURE. I didn't hear it right then.

Mr. LEGASSIE. The Synthetic Fuels Corporation has a capability to fund a joint-venture basis demonstration size module of technology which can then be expanded to commercial size. The administration is saying that that level of activity which is still below commercial size should be done by the Synthetic Fuels Corporation.

Senator McCLURE. Assume for a moment that the Synthetic Fuels Corporation cannot participate there, is it appropriate for Government to be involved in other ways?

Mr. LEGASSIE. I think that there has to be some kind of Government assistance available in the regime that is above 5 or 6 tons a day. It is also appropriate for the Government to assist a commercial plant, at least the early commercial plants, through the Synthetic Fuels Corporation. This policy is established for which there is $17 billion available to support such ventures. In addition, it is appropriate for the Synthetic Fuels Corporation to support a demonstration module. The administration believes that these are appropriate functions for the SFC and not the Department of Energy. The question may then arise, does that leave a gap?

And in my view, it does not. So that in terms of the statement I would make, we would look to the Government role being this, let's say, the Wilsonville level 6 tons a day. We might propose to continue operating Wilsonville in 1983 as part of our generic R. & D. program. It is a small enough facility we could consider that.

We have seen that the private sector is able to take the step, for example, of building a 100-ton-a-day pilot plant with private money if they really assess that the project is sound. And we have a case where that is going on. We have other cases in Europe where gasifiers are being developed at this kind of scale. In addition, there is a lot of activity in the private sector.

If to get from there to 30,000 tons a day requires a demonstration module, then I say there is the language and the capability in the Energy Security Act, the Synthetic Fuels Corporation, to assist.

Senator McClure. I know that, but I premised my question on the basis that if as a matter of fact, that is not so, and the Synthetic Fuels Corporation Energy Security Act moneys are not available for that purpose, would Government involvement be justified in some other fashion?

Mr. LeGassie. Well, then, I think you are back to a case-by-case answer because in some technologies, the scale of risk may be well understood. The process data base may be very sound, and the technical risk in a very large scaleup may be small.

For example, the refinery business, you can go from a test tube to a full-scale distillation column without doing anything in between because people understand it so well now. But in those technologies where that knowledge base has not been built up, there could be such a need.

Senator McClure. That is an assessment-of-risk basis rather than size-of-plant basis or size-of-effort basis.

Mr. LeGassie. I am talking about going from size A to size B. And the question was: Is the Government involvement needed? And I am saying I can see some cases in which it isn't because the private sector understanding is good enough that the risk is within the capability that they would normally assume. And in other cases, if there is no Government support, then it probably won't happen.

Senator McClure. And I don't disagree with that statement at all. But you are looking for Synthetic Fuels Corporation to plug that gap for those which the business would not otherwise undertake.

Mr. LeGassie. Yes.

Senator McClure. That would imply that Synthetic Fuels Corporation ought not to be involved in those which private industry would otherwise undertake.

Mr. LeGassie. Yes; I think that is——

Senator McClure. I don't see any adequate mechanism by which that will happen. As a matter of fact, exactly the opposite is likely to happen. The Synthetic Fuels Corporation will have a list of applicants. They already have 60, and they will choose the best 60, not the worse

60—the best, the ones that are most likely to succeed without Government intervention.

Mr. LEGASSIE. My understanding on that point, sir——

Senator MCCLURE. And if I may, unless you make the assumption that business will not come to the Synthetic Fuels Corporation if they can possibly avoid it——

Mr. LEGASSIE. I believe we are talking about whether the Synthetic Fuels Corporation spends all of its money on its predominant mission or whether it allocates some funding to do this other activity.

Now, it is my understanding that the administration would ask the new Chairman of the SFC to insure that some number of worthy demonstration modules are funded by the SFC. The administration's view is not only that it ought to be considered there, they indeed have the view that by putting all of this in one place that there should be some tending of the store of these other missions that are in the act.

I think your concern that demonstration modules would not be supported would only come about under different circumstances. I think we have the clear intent that the administration enunciated that it wants to have demonstration modules also considered and not forgotten about in the activities of the Corporation.

Senator MCCLURE. I think that attitude is becoming more clear as we go through the questioning. It has been immensely useful to me because I have been concerned that this middle area was being ignored by the administration and had not been developed.

One of the problems that I have is the administration seems to have a perception of the Synthetic Fuels Corporation's role as being quite different from that which I understand congressional understanding and intent to be.

If, as a matter of fact, it can be moved in the direction that you suggest with or without change in law, then indeed, the Government will have an active role in providing the impetus to some demonstrations that are not intended to be commercializations.

Mr. LEGASSIE. That is exactly what I am trying to convey to you, sir. I think my own perception is that indeed the Congress had in mind in passing the Energy Security Act that this is where all the commercial plants would be. And there was in a different place in the Government at that time—namely the Department of Energy—these large demonstration plants.

And this administration has been saying that the situation of having two different entities involved in the large-plant business means that something is lost. Now that the Synthetic Fuels Corporation is a reality and has the power to make selections on joint ventures involving demonstration modules, it is better to have all the decisionmaking there.

The question of how we choose to do business with a particular company, a particular process, for a demonstration module would reflect the mentality that is also selecting particular projects for commercialization support in a commercial size.

Senator MCCLURE. If the Synthetic Fuels Corporation is to exercise that out of the $17 billion that is or perhaps will be left to them to spend, how do they choose? Upon what criteria do they base the division between energy commercialization and what you call modular demonstration?

Mr. LEGASSIE. Well, clearly, that is one of the responsibilities of the new Chairman and new board who I assume will have conveyed to them this administration's desire.

And unfortunately, these individuals are not named and in place and functioning so that this idea may not yet be fully operative in the present corporation.

Senator MCCLURE. Well, what guidelines are there in the statute that would aid them in making that decision?

Mr. LEGASSIE. Well, certainly there are guidelines in the statute that speak to the value of diversity of technology. And if I could visualize myself as a person in the Corporation, I would say, for example, that I wouldn't want to commit the United States to an endless set of SASOL plants limited in terms of the kind of coal that could be used and at SASOL costs forever.

I would want the Corporation to take some step to be supportive of an alternative version of coal liquefaction technology.

Senator MCCLURE. I understand that that may be your approach to the problem, but where does it state that in the statute?

Mr. LEGASSIE. Well, the statute speaks about diversity of technology. So I am suggesting that one could look at that language in the statute and argue an implication of that with respect to an obligation of the Corporation to look at these kinds of issues.

Senator MCCLURE. But the diversity of technology is related to having a range of technologies, all of which have the same degree of commercialization prospects.

Mr. LEGASSIE. Well, I am not sure, sir. And obviously, I am not a member of the Corporation. I probably shouldn't be having this particular discussion with you.

Senator MCCLURE. Well, on the contrary, you are suggesting that the administration's position is that the Synthetic Fuels Corporation ought to plug the gap.

Mr. LEGASSIE. I think the administration has said that very clearly.

Senator MCCLURE. I understand that, but if, as a matter of fact, you are suggesting that that is what the Synthetic Fuels Corporation should do, then I think it is entirely appropriate you should have some opinion as to how they are going to do it based upon the statute, not based upon some idea of what you think the statute ought to be.

Mr. LEGASSIE. No, no. The statute provides for joint ventures. That is the specific term in the statute as the mechanism to use. And I understand you to be asking me, all right, how would you decide which joint venture?

Senator MCCLURE. I am asking you how you would choose between those which are commercialization directly and those which are what you describe as demonstration modules.

Mr. LEGASSIE. Then, I am trying to see whether I understand what you are saying. You are perhaps asking if I have $17 billion available to me as Chairman of the Corporation, how do I decide to put $15 billion on commercial plants and $1 billion on demonstration modules or $10 and $7 billion.

Senator McCLURE. That's right, and where in the statute do you derive that direction or are you suggesting that the Synthetic Fuels Corporation has $17 billion to spend however they see fit?

Mr. LEGASSIE. Well, I think, first, I don't believe that the statute has any guidance with respect to how to make that distribution. But the thing not to lose sight of in this conversation, in my view, is that these demonstration modules are defined as steps preliminary to commercial plants.

Senator McCLURE. Aren't all demonstrations?

Mr. LEGASSIE. But I presume what would be supported would be an individual who came in and said, "I want support first for this demonstration module, and then if that demonstration module meets certain tests, I want support to turn that into a commercial plant."

So that this really is a proposal ultimately for a commercial plant, but in two phases.

Senator McCLURE. It would be your expectation that the two were tied together by contract?

Mr. LEGASSIE. Yes; that's the key point I am trying to communicate now, not just simply——

Senator McCLURE. So that the end result is commercialization?

Mr. LEGASSIE. The end result is commercialization. Of course, I mean, to somehow disconnect the two doesn't make sense.

Senator McCLURE. How do you distinguish that from just pure demonstration?

Mr. LEGASSIE. Well, in fact, we have received proposals of that character, sir. If I can now share some experience in the area of the feasibilty studies and cooperative agreements which were, as you know, precursors to movement toward the Synthetic Fuels Corporation, there were proposals of just that character.

There were people who came in and said—the one I am thinking of is one in the oil shale business where the individual said, "I want to get to a 50,000-ton-a-day oil shale plant, if you want to call it that, but I can't immediately ask for that. I have to go through a step of building a module for recovery of oil shale of a certain size. And then, my second module which I will build promptly after that will be of commercial size. Then, I will replicate that until I have 50,000.

"And I want support for this entire chain of activity, starting first with this demonstration module. And I have a right to pull out of this arrangement if that first one fails. But if it doesn't fail, I am committed to go on to the whole thing."

So proposals like that have actually been formulated and, indeed, they make sense. And in the case of this particular version of oil shale technology, they make eminent sense.

Senator McCLURE. I understand that, but there are some demonstrations of technology in which you will not find a commercial sponsor; is that not fair?

Mr. LEGASSIE. Yes; the answer is yes.

Senator MCCLURE. And they would not necessarily be confined to the very small demonstrations of the size which you have suggested.

Mr. LEGASSIE. We have, in fact, in our program used the case of the Illinois coal gasification plant. This is a very large demonstration technology which is currently proceeding with completion of design activities. It is somewhat unclear as to how this project would eventually turn into any kind of commercial activity other than providing a data base for someone else to pursue.

Now, my own feelings are you are somewhat better off in a situation where you are dealing with a person who says, "I want to be a participant in a demo plant, and if successful, I want to commercialize."

Senator MCCLURE. No question about that.

If, in fact, the commercial plant looks that good and the payoff will be that immediate and foreseeable, yes, you will get that participation. But what I would be concerned about is those demonstrations in which you don't have that kind of commercial linkage and that kind of commercial sponsorship.

Mr. LEGASSIE. Perhaps we ought not to be doing those, sir.

Senator MCCLURE. Perhaps not. And perhaps that is the decision of the administration.

Mr. LEGASSIE. Yes.

Senator MCCLURE. So when you are saying "perhaps not," you are saying that is our position those should not be done?

Mr. LEGASSIE. Well, I can't speak for the SFC who has the responsibility for taking those positions ultimately, but I think myself that is the practical consequence of the proposal.

Senator MCCLURE. Well, yes, it is the practical consequence and, therefore, I assume that that is the desired end.

Mr. LEGASSIE. I would assume so also. It is not my job to be a spokesman on that point. That is all I am trying to say. I don't want to speak for the SFC because they should be the spokesman on that judgment.

Senator MCCLURE. In case I did not make it clear earlier, I do wish to have the internal opinion with respect to the authority of the SFC upon which you are basing this policy.

Mr. LEGASSIE. We will provide you those legal memoranda, and we will furnish that for the record, sir.

Senator MCCLURE. If you do so, I would hope you could do it rather soon.

Mr. LEGASSIE. They are readily available, and we will get them to you this afternoon or tomorrow morning.

Senator MCCLURE. Thank you very much.

We are making decisions right now in the budgetary process in which these become very central to the discussions. That is why I have taken longer on these this morning than I have on a whole host of other things that are of equal concern, but not so central and with respect to the budgetary process.

ADDITIONAL COMMITTEE QUESTIONS

There will be a number of other questions that I will submit and other members of the committee may have in writing. We request prompt response to that so that we may utilize them in the markup of the budget which is underway now, I might add.

Mr. LEGASSIE. All right. We will try to be particularly sensitive to give you a prompt turn-around of that material, sir.

Senator MCCLURE. Thank you very much.

And I do want to thank you for your testimony this morning. I think it has been illuminating. And to the extent we probed on a couple of issues, I can understand the difficulty that you have when you are in the midst of negotiations with foreign governments in making specific statements.

I just don't want us to be misleading anyone here at home as we try to make certain that we don't send the wrong signals to other people. And I am less constrained in that process than you are.

Mr. LEGASSIE. I want to assist you in every way that I can, sir.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

SRC-I Project

Question: With respect to the SRC-I project, it has been estimated by industry that 5-year operation of the plant could generate revenues as high as $2.802 billion. In your opinion, is this possible? Has the U. S. Government been guaranteed any return should SRC-I go into operation?

Answer: Yes, it is possible that a 5-year operation of the SRC-I plant could generate revenues as high as $2.802 billion. However, two assumptions are built into this estimate:

- o EIA pricing indices are valid and that product revenues will escalate 10 percent/year.
- o The on-stream time through Phases 3A, 3B and 3C can be achieved.

Additionally, the U.S. Government is guaranteed a share of revenues, if produced. Specifically, net revenues received from the sale of products will be shared equally between the contractor and DOE up to $50 million. Revenues in excess of $50 million can be used as a credit in purchasing the plant.

General

Question: Moving on now to other Fossil R&D activities, your R&D budget of $417,340.000 for FY 1982 has been greatly reduced from the $711 million 1981 budget. What rationale or criteria did you use in making such large reductions? In your opinion, what will the impact of these reductions be on future energy development in this country?

Answer: The Fossil Energy budget is based on the philosophy that the government will concentrate on providing a sound technical base by focusing on longer-range, high risk research and development. Government assistance will focus on energy options that are truly beyond the capacity of private industry and thus do not pre-empt private initiative or benefit individual firms. Where the risk is sufficiently high and the promise sufficiently great, a primary government role may be justified. Once the conceptual hurdles have been surmounted and the commercial benefits are evident, the final scale-up and development of new technology will be the responsibility of industry.

Activities for which there is a need for a Federal R&D role must also be assessed based upon a number of other criteria which can be employed to derive Fossil Energy strategic priorities which are also consistent with National energy priorities and energy R&D requirements. These additional considerations include:

- The urgency of the specific aspect of the Nation's energy problem which the activity addresses. Urgency here is construed to include National security, economic, and environmental considerations.
- The urgency of the need for an improved technologic and environmental knowledge base from R&D to enable the private sector to proceed with use of the technology or resource. This includes the value which the R&D results can provide in narrowing the range of critical uncertainties which prevent energy supply and demand markets from working in an economically efficient manner.
- The urgency for technical and environmental constraint removal through new technology resulting from R&D as compared to the urgency for the roles which other instruments for National policy implementation can play. These other instruments include particularly: reductions in regulatory uncertainty, regulatory reform, tax and other economic incentives, institutional changes, and the establishment of market mechanisms and prices which efficiently allocate resources.
- The insurance or hedge value which the R&D results could provide against uncertain future situations with high downside risks. Downside risks are construed to mean unacceptable or highly undesireable security, economic, or environmental impacts. R&D on technologies which remain critical to achieving National energy goals over a wide range of projections for alternative futures are given priority recognition for their contribution to a robust technology portfolio. This consideration includes recognition of the potential for contribution by highly uncertain technologies (high-risk) and technologies which, although they may not be central or key in the best-estimate projections of the future, become important in some future scenarios. Their importance may be due to the high priority energy problems which would exist absent that technology or due to "technologic failures" of other higher priority technologies to make their potential contributions.

Subject to the general rationale stated above, four strategic priorities were established:

1. Highest priority was assigned to R&D activities which can achieve high payoff in the development of the technology base necessary for the private sector

to directly reduce U.S. vulnerability to the economic and security implications to reliance upon imported sources of oil.

2. The second priority was assigned to R&D activities which can make significant contributions to achieving the goal of increased public confidence in and acceptance of the ability to sustain an adequate longer-term supply of supplemental gaseous fuels in an environmentally acceptable manner, and at costs which can effectively provide a backstop supply that breaks the link between gas prices and oil prices. This can be accomplished by establishing the technology base for a diversity of domestic supply sources which together can cap gas prices well below expected oil prices. This priority contributes to increased National security/vulnerability reduction goals by complementing other non-R&D actions underway to reduce oil use through displacement with gas.

3. The next priority was assigned to R&D activities which can provide the foundation for the greatly increased use of coal and other abundant fossil energy resources with high payoffs in potential economic improvements; improved efficiency and flexibility of coal use; and improved environmental performance.

4. The next priority was assigned to R&D activities which address the technology base for extraction, conversion, and utilization of less abundant fossil energy resources; to technologies that address highly specialized applications or smaller market sectors; and technologies that provide hedges or insurance for other technologies already included in higher priority categories.

These four categories are not all-inclusive. For example, applied sciences for coal, shale, oil, and gas will need to be extended to provide an adequate understanding of the relationship between resource properties and process variables for extraction, conversion, and utilization processes and to provide industry the knowledge base necessary for applications to the full-range of coals, different shales, and types of petroleum and to establish the basis for entirely new processes and concepts. These generic areas of AR&TD and APT have been given high priority.

While there may be some initial delay inherent in the process of shifting responsibility for several billion dollars worth of development and demonstration activities from DOE to the private sector and the Synthetic Fuels Corporation, we believe that the end result will be the timely development of the most cost-effective alternatives. The Administration has sent a clear signal that the private sector will be responsible for near-term development and demonstration. This will eliminate potential delays due to companies trying the Government route to obtain funding prior to committing to funding through their own resources. This will also eliminate potential delays that have historically occurred in the process of moving near-term Government R&D programs into the commercial arena.

The Administration is currently preparing a variety of proposals to improve the economic and regulatory climate for energy investment. One example is the Administration's proposed Accelerated Cost Recovery System, which will allow R&D machinery and equipment to be written off for tax purposes in three years. By providing incentive to encourage the private sector to develop new near-term technologies, market forces will be allowed to determine the most economical alternatives rather than rely on the Federal Government to make the choice.

Mining Research & Development

Question: What obstacles prevent private industry from carrying out the activities to be funded by the $15 million request for underground coal mining in your Mining R&D account? Hasn't the positive economic situation coal now finds itself in made it more realistic for industry to get involved?

Answer: The general obstacles to private industry mining R&D are affected only in degree by the economic climate. Basically, the obstacles to private sector mining R&D are a combination of risk and the inability of technology developers to obtain an economic return on the R&D investment. This latter point is related to the fact that mining technology does not generally involve high volume/high technology products that can be easily protected and marketed. The more research oriented the effort, the greater the risk and the less the incentive. Industry has been and must continue to be involved in adaptation of mining technology (which has been proven in principle) to the wide-range of U.S. mining conditions. This will consist of evolutionary technologic improvements in the absence of an active research pipeline. With the pipeline, there can be major advances in mining technology and thereby a solution to the industries perennial problems of cost, resource recovery, health and safety, productivity, and environmental protection. This is the product the Department is addressing with our effort.

Advanced Research and Technology Development

Question: Pages 100-102 of the justification discuss the surface water containment and waste water treatment facility for the Pittsburgh Energy Technology Center. Rather than funding them for $3 million in FY 1982, would it be possible to give them the engineering money this year and other funds for construction later, since they don't plan to begin construction until the 3rd quarter of FY 1983 anyway?

Answer: Only $1 million is requested for FY 1982, with the balance of construction funds to be requested for FY 1983 as outlined on pages 35, 100, and 102 of the Congressional Budget Request. The $1 million requested will cover Title I (preliminary design), Title II (definitive design), and long-lead equipment items such as reactor clarifiers, ferric sulfate pumps, sludge and caustic pumps, sludge thickeners, main electrical power transformer, electrical switch gear and motor control equipment, polymer and caustic storage tanks, etc.) which must be procured timely if the project is to be completed and operable by the deadline of July 1, 1984, cited in the Federal Water Pollution Control Act.

Oil Shale

Question: What rationale or criteria did you use in cutting back the oil shale R&D budget?

Answer: Essentially the budget cuts reflect termination of major technical demonstrations which had progressed to the stage where financing for completion of the existing projects or subsequent developmental projects could be obtained from the Synthetic Fuels Corporation, or from private institutions.

Question: On page 33, under Advanced Research and Technology Development, you state that: "significant progress has been made in understanding the mechanism and kinetics of coal dissolution and the role of coal mineral matter in coal liquefaction. New analytical tools have been developed that are being used to identify the critical transformations that accompany coal conversion." This statement and the paragraph it comes from constitute a glowing assessment of the state of the art of basic research on coal for liquefaction purposes. Can anything nearly so positive be said about the state of basic knowledge or research on oil shale? Isn't it important to compare coal liquefaction and oil shale because they may be the two best potential replacements for liquid fuel?

Answer: In answer to the first part of the question, it can be firmly established that the Governments' oil shale research program has provided the retorting reaction kinetics and mechanisms and other essential technology base information that enables industry to launch its first commercialization attempts. Industry has relied heavily upon and continues to rely upon the work done by Laramie Energy Technology Center and the Lawrence Livermore Laboratories on the chemistry and physics of shale conversion. Also, the Government program conceived and tested the Gas Combustion retort which is the forerunner of many of today's retort technologies. This same type of research activity is necessary now to establish a basis for technology that will allow full realization of the resource potential. The technology development necessary to mitigate environmental impacts that may limit shale oil production and to enable increased resource recovery.

As to the second part of the question, it is difficult to compare oil shale and coal liquefaction because the conversion technologies are drastically different as are the properties of the end product. Oil shales are suited to middle distillate fuels, such as jet and diesel fuels whereas coal liquids are suited to heavy fuel oil and components of gasoline. Both technologies are needed to provide the cross section of liquid fuels required.

Question: On pages 124-125 of the justification document, you state that: "The recoverable oil shale resource is much greater than all of the oil reserves of the Middle East. This resource could easily support oil production on the order of many millions of barrels per day, thereby contributing substantially to a reduction in imports." We recognize, of course, that significant constraints limit our present capability to make use of this shale resource, including economic and environmental constraints. Your justification also refers to significant technology barriers. But, isn't there a serious need for the government and DOE to formulate a deliberate and appropriate research role in the area of oil shale? In this context, and given the great potential for oil shale to lessen our dependence in the most vulnerable area -- petroleum-based liquid fuel -- it should be pointed out that over the last three years, about $1.8 billion dollars has been spent in coal R & D in the Fossil Fuel budget, while only $80 million has been spent researching oil shale. None of the shale research has been in the area of basic research. Why? What plans does DOE have to assess the needs of oil shale research and to address this apparent imbalance in our R&D emphasis?

Answer: DOE has adopted a policy that the appropriate research role in the area of oil shale is to continue to sponsor technology base activities within our existing R&D program which provide the basic understanding of the key process elements involved such as chemistry, physics, reaction kinetics and mechanisms of conversion techniques as a function of operating parameters and oil shale properties. This policy includes taking promising but long-range and high risk concepts evolving out of the technology base efforts through a concept development stage, i.e., to the point where a determination can be made as to whether process development is warranted. Subsequent specific process development at large pilot or demonstration plants would be a function of private industry or Synthetic Fuels Corporation sponsorship.

At the more specific planning level, our program is continuously subject to review and update as needs and priorities change, including input from dialogues with industries and academia, both formal and informal. The formal process involves peer review groups examining specific aspects of our program, such as the recently published (March 1981) Peer Review in Oil Shale Instrumentation, and the February 1980 Peer Review of Environmental Aspects of Modified In Situ Oil Shale Retort Abandonment. The types of research performed in our technology base work can be defined as basic (or fundamental) research, although the classic distinction between basic and applied research is that basic research has no pre-conceived practical applications whereas our program has the goal of providing a data base from which improvements in oil shale extraction technologies will ultimately result.

Question: Please furnish a comparison of FY 1981 and FY 1982 allotments for oil shale R & D to the DOE national labs. Specifically, which labs will, in FY 1982, receive an increase over FY 1981 levels of funding for oil shale R & D activities, and what will those increases be? What change, if any, is projected in the nature of activities undertaken in FY 1982 by the national labs in the area of oil shale R & D?

Answer: The following is a tabulation of funding allotments to the National Laboratories for FY 1981 and proposed allotment for FY 1982:

($ in thousands)

Laboratory	FY 1981	FY 1982
LANL	$ 1,684	$ 2,000
Sandia	3,923	2,800
LLL	3,000	3,400
LBL	660	600
TOTAL	$10,117	9,000

Our National Laboratory effort remains one of technology base activities. As reflected in the funding there is no increase in funding or addition of activities involving field project operations. The National Laboratory component of the oil shale R&D budget, as illustrated in the table, represents our continuing technology base program whereby generic data is produced that is beneficial to improvements in a variety of oil shale technologies rather than being process specific. The reduction in FY 1982 and minor shifts in relative funding allocations between laboratories reflects shifts in emphasis of specific projects. For instance, the shift of fracturing research by Los Alamos National Laboratory (LANL) from an industrial mine site to our Anvil Points mine required increased funding. Sandia National Laboratory (SNL) instrumentation at industrial sites will be decreased in FY 1982. This accounts for the overall decrease in funding.

Question: On page 125, it states that the specific objectives of the oil shale R & D program include: "to foster development of innovative processes . . . to make the leaner shales in the east and west exploitable." Further down on the same page, you zero out the most promising process specifically designed to develop these lean deposits, the HORIZONTAL IN-SITU process of Geo-Kinetics. Why have you chosen to zero out a project of such direct significance to a primary research objective, and which has a project life of one more year before it will have developed a data base which will enable it to feasibly apply for private funding?

Answer: The Geokinetics project is not directed to lean shale. This project is concerned with demonstration of a process for the relatively-rich Mahagony zone deposits that lie near the surface in Utah. Geokinetics is now in the second year of Phase 6 of a development and demonstration in situ oil shale project. As originally negotiated, the ultimate demonstration phase (Phase 6) was expected to be a 24 month effort involving demonstration of two to five demonstration-sized retorts (120 feet wide, 50 feet thick, and 250 feet long). The project in earlier phases progressed through a series of increasingly larger retorts, and has now substantially exceeded original objectives. The first of two demonstration-size retorts is now burning; a second has been rubbled and burning will be substantially completed using FY 1981 funds. These retorts are approximately 210 feet wide, 240 feet long, and are the full thickness of the Mahagony Zone shale bed at the project site. It is also planned to test improved rubblization of a third retort of this size with FY 1981 funds.

We believe that these FY 1981 demonstration tests will have placed Geokinetics in a position to seek funding for either further development or commercialization from private industry or the Synthetic Fuels Corporation. The research and development objectives of DOE regarding this process will have been accomplished under the FY 1981 funding.

Combustion Systems

Question: A significant amount of funding to pursue pressurized fluid-bed combustion technology has been appropriated over the years. On p. 51 of the justification, DOE proposes to budget $17 million for FY 1982, including a new line item of $1 million for alternate turbine testing. In the Advanced Environmental Technology, under the Turbine Cleanup Systems heading (p. 25 of justification), it appears that a significant amount of R & D will be pursued on the environmental implications of the pressurized fluidized bed. Specifically, it appears that $6.8 million in this category will be used in FY 1982 to research PFB cleanup concepts.

How intensively should we be pursuing the PFB as a long-term answer to increasing the clean utilization of coal? When considering the range of alternatives for R & D to promote the clean use of coal, the options include: pre-combustion clean-up of coal; combustion modes other than PFB which would burn cleanly but without requiring the overhaul of industry's physical plant that PFB would require; and developments in post-combustion clean-up technologies. How does industry view the alternatives for R & D to promote the clean utilization of coal? Is PFB a technology that they are willing or likely to pick up on?

Answer: Of the advanced clean coal utilization technologies which have been developed to the point where resolution of technical uncertainities would permit them to be commmercialized by the private sector in the early 1990's, only two, Pressurized Fluidized Bed (PFB) and Gasification Combined Cycle (GCC), promise both significantly increased thermodynamic efficiency and significantly reduced levels of pollution. The higher thermodynamic efficiency of PFB and GCC results in these technologies requiring 17 to 23 percent less coal, respectively, than conventional technology. This efficiency improvement not only has implications for improved economic performance but also results in reducing the environmental and potential health impacts associated with coal mining, transportation, and ash disposal.

Neither PFB nor GCC has yet demonstrated a clear economic or technological advantage. Indeed, both may prove to have applications in meeting different industrial requirements. Therefore, it is prudent that DOE continue to support the necessary R&D effort to provide industry with the data base needed to bring either (or both) technologies to commercialization.

The FY 1982 budget request for the PFB program includes funds to continue construction of the PFB pilot plant (to be completed early in 1983) and initiate design of an Alternate Turbine Test to be located adjacent to the pilot plant site. Technical data and operating experience obtained from these two projects along with PFB support data base activities will provide U.S. industry with the information needed to bring PFB technology into the marketplace in the early 1990's.

Because of uncertainties associated with the relative immaturity of this technology, various segments of industry have selected different candidate advanced processes for the clean utilization of coal. DOE and industry are continuously trying to balance the proliferation of technologies which offer additional economic and environmental advantages with the need to focus resources on a smaller number of projects in order to perform timely technological assessments.

PFB technology has not advanced to the stage where private industry is willing to assume all development risks leading to its commercialization. However, the process has shown sufficient commercial potential to be identified by industry as one of the most promising new technologies for increased utilization of high sulfur coal. Industry has demonstrated a willingness to cost-share the research and development effort needed to bring this technology to the marketplace. Examples include the response from several major utility companies (in collaboration with major utility equipment vendors) in submitting proposals for DOE assistance under the Innovative Combustion Category of the second round of the Alternate Fuel Solicitation. Additionally a major American gas turbine manufacture has cost-shared the construction and testing of a gas turbine long term materials test facility. Under this cost-shared project the company is constructing the facility at no cost to the Government, while the unit's initial test program is being funded by DOE.

Question: What is the propriety of DOE, with its new guidelines, now funding construction of a pressurized fluid bed pilot plant, with the aim of producing a conceptual design for a commercial-size plant?

Answer: The aim of the PFB pilot plant is to provide operating data on system performance which will provide the private sector with the necessary technical information for commercialization. It is not the intent of the program to produce a conceptual design for further DOE demonstration.

More specifically, the objective of the PFB program is to develop improved combustion systems which allow for the displacement of oil and natural gas in the industrial and utility sectors with coal and coal based fuels in an environmentally and economically acceptable manner. Pressurized fluidized-bed systems have been selected by DOE as a long term, high risk, high benefit technology to meet these objectives. PFB systems have the capability of meeting these present new source performance standards as well as anticipated performance standards through the year 2000. In addition, PFB has the capacity for substantially reducing capital costs versus pulverized coal-fired boilers. This reduction in capital costs when combined with its improved efficiency (whereby the coal required to produce a kilowatt hour or electricity is reduced 15 percent), results in a savings of the cost of electricity.

Construction of the PFB pilot plant was initiated in June 1980. At the present time, the foundation has been completed, structural steel for the facility has been fabricated and is being delivered to the site for erection starting June 1981. The PFB combustor is being fabricated with erection scheduled for July 1981. As of April 1981, approximately 36 percent of the engineering and procurements for the construction were completed. The pilot plant components are approximately 1/2 the size of commercial scale components.

The pilot plant is designed with the capability of serving as a site for alternate gas turbine tests. Gas turbine reliability and degradation mechanism in a high temperature, high efficiency PFB combined cycle is a major uncertainity. The purpose of the alternative turbine test is to better represent the spectrum of available U.S. industrial turbines operating in PFB systems by obtaining degradation data and information on erosion and corrosion mechanisms with blades which represent a major segment of U.S. commercial gas turbines.

By reducing the technical risk to a point allowing private sector assessment of PFB performance, this project is entirely appropriate to the new DOE guidelines.

Fuel Cells

Question: The Administration's FY 1982 budget request for fuel cells substantially reduces the level of federal support for phosphoric acid fuel cell development. If this committee were to make additional funds available to DOE for phosphoric acid fuel cell development, how would the Department make use of those funds?

Answer: The attached capability statements were submitted by DOE to other Congressional committees and do address the issues associated with this question and represent the Administration's position on these issues.

The primary DOE role in the National Fuel Cell program is to support the necessary high risk technology development activities while the private sector pursues the initiatives required for commercialization of the technology.

CAPABILITY STATEMENT

Agency/Bureau: U.S. Department of Energy - Fossil Energy
Appropriation: Fossil Energy Research and Development
Activity: Fuel Cells
Proposed Amendment: Increase the FY 1982 budget for the Phosphoric Acid On-Site/Integrated Energy Systems research and development to $16,000,000.

Current Program:

The DOE Fuel Cell activity for FY 1981 includes three research and development subactivities devoted to: 1) Phosphoric Acid Fuel Cells, 2) Molten Carbonate Fuel Cells, and 3) Advanced Concepts. The phosphoric acid full cell subactivity supports research and development of multi-megawatt electric utility systems, multi-killowatt on-site/integrated energy systems, technology base, and exploratory investigations of fuel cell applications to defense and transporation systems.

This proposed amendment deals with the on-site/integrated energy systems element of the phosphoric acid subactivity only.

The emphasis in FY 1982, under the current program, for on-site/integrated energy systems research and development will be on high risk technology development activities in support of the National Fuel Cell program which was defined in FY 1980 by the National Fuel Cell Coordinating Group. This includes technology development of cell and stack technology of the 40 KW on-site power plant at United Technology, Westinghouse/Energy Research Corporation and Engelhard Industries.

The private sector is expected to support the continuation of the 40 KW field test program (which was initiated in FY 1981) and the remaining technology development and commercialization activities defined in the National Plan for total power plant system development.

Amount Budgeted in FY 1982:

Total budget allocation for the phosphoric acid subactivity is $10,100,000. The on-site/integrated energy system element of the phosphoric acid subactivity is budgeted at $3,200,000.

Feasibility:

In FY 1981 agreements were made with the private sector participants that DOE will focus on techology base and research support and the private sector will fund all the field test and demonstration activities within the National Plan beginning in FY 1982.

In view of the agreements reached regarding the DOE and private sector roles in the total phosphoric acid subactivity priorities, the proposed increase of $12,800,000 (from the current $3,200,000 to $16,000,000) would be used to displace private sector funding for the field test program and the technology commercialization program with government funds.

Capability:

In FY 1981, multi-year contracts were initiated in cost sharing with the private sector to implement the National Fuel Cell Program.

The participants' share of the program was based on the pace which would be dictated more by technical implementability than by funding constraints. It is estimated that, at most, the government funding share in the on site/integrated energy systems program could be increased from $3,200,000 to $7,700,000. As noted earlier, this increase in government share would come at the expense of a decrease in private funding.

Outlay Effect:

An increase of $4,500,000 in the FY 1982 budget request would increase the outlay estimate for FY 1982 by $3,000,000 and FY 1983 by $1,500.000.

CAPABILITY STATEMENT

Agency/Bureau:	U.S. Department of Energy - Fossil Energy
Appropriation:	Fossil Energy Research and Development
Activity:	Fuel Cells
Proposed Amendment:	Increase of $19,900,000 for the phosphoric acid fuel cell budget for FY 1982 from $10,100,000 to $30,000,000.

Current Program:

The DOE Fuel Cell activity for FY 1981 includes three research and development subactivities devoted to: 1) Phosphoric Acid Fuel Cells, 2) Molten Carbonate Fuel Cells, and 3) Advanced Concepts. The phosphoric acid full cell subactivity supports research and development of multi-megawatt electric utility systems, multi-killowatt on-site/integrated energy systems, technology base, and exploratory investigations of fuel cell applications to defense and transporation systems.

The emphasis in FY 1982, under the current program, for on-site/integrated energy systems research and development will be oh high risk technology development activities in support of the National Fuel Cell program which was defined in FY 1980 by the National Fuel Cell Coordinating Group. This includes technology development of cell and stack technology of the 40 KW on-site power plant at United Technology, Westinghouse/Energy Research Corporation and Engelhard Industries.

The private sector is expected to support the continuation of the 40 KW field test program (which was initiated in FY 1981) and the remaining technology development and commercialization activities defined in the National Plan for total power plant system development.

Amount Budgeted in FY 1982:

The current FY 1982 budget for the phosphoric acid subactivity is $10,100,000. This amount is allocated as follows:

Electric Utility Systems	$5,200,000
On-Site/Integrated Energy Systems	$3,200,000
Technology Base and Field Cost	$1,700,000

Feasibility:

The proposed increase of $19,900,000 envisioned continued DOE funding of the 4.8 MW field test demonstration at a cost of approximately $5,000,000 to DOE. The Administration believes that this demonstration activity can and should be more properly conducted by the private sector. Of the remaining $14,900,000, $4,500,000 would be allocated to the on-site/integrated energy system program. In FY 1981, agreements were made with the private sector participants that DOE will focus on technology base and research support and the private sector will fund all the field test and demonstration activities within the National Plan beginning in FY 1982.

In view of the agreements reached regarding the DOE and private sector roles in the total phosphoric acid subactivity priorities, the proposed increase of $12,800,000 (from the current $3,200,000 to $16,000,000) would be used to displace private sector funding for the field test program and the technology commercialization program with government funds.

In addition, $3,200,000 could be utilized to accelerate technology base and other applications. However, the program division considers the current program schedule to be acceptable, particularly in view of the need to reduce federal spending to control inflation.

In summary, if additional resources were made available, a revised funding level would be as follows:

Phosphoric Acid Research and Development Area in Order of Priority	Current Level Funding	Amended Funding Level
Electric Utility Systems	$5,200,000	$10,300,000
On-Site/Integrated Energy Systems	$3,200,000	$7,700,000
Technology Base and Other Applications	$1,700,000	$4,900,000
Total Phosphoric Acid	$10,100,000	$22,900,000

Because the Fuel Cell program is executed on multi-year contracts, any increases in FY 1982 funding will require increases in the outyears, if the benefits of increased FY 1982 funding are to be achieved. The FY 1982 increase would require corresponding increases shown in the chart below.

Capability:

In FY 1981, multi-year contracts were initiated in cost sharing with the private sector to implement the National Fuel Cell Program.

The participants' share of the program was based on the pace which would be dictated more by technical implementability than by funding constraints. These contracts, however, were designed to accommodate to the maximum extent possible funding constraints by any of the participants via schedule changes maintaining the National program mission-oriented and maximizing cost effectiveness.

The program has the personnel and management capability to manage an increased funding level. However, an increased funding level would not necessarily lead to a larger overall program or to an acceleration of specific program activities, because it would, for the most part, merely displace private sector investments.

Outlay Effect:

An increase of $12,800,000 in the FY 1982 Budget Authority would increase outlays by the following:

($ in millions)

FY 1982		FY 1983		FY 1984		FY 1985		FY 1986	
B/A	B/O	B/A	B/O	B/A	B/O	B/A	B/O	B/A	B/O
22.9	18.6	41.2	29.6	49.2	40.4	32.5	36.2	23.0	29.2

CAPABILITY STATEMENT

Agency/Bureau: U.S. Department of Energy - Fossil Energy
Appropriation: Fossil Energy Research and Development
Activity: Fuel Cells
Proposed Amendment: Maintain budget at current level for Molten Carbonate Fuel Cells.

Current Program:

The program is currently scaling up the small laboratory and bench-scale hardware and fabrication techniques that have been used to investigate basic phenomenology and to establish engineering feasibility. This involves developing methods for producing larger components at costs that are compatible with the economics of power generation. Two major contracts at UTC and GE comprise the bulk of the present program. In FY 1981, a "critical mass" of molten carbonate fuel cell technology base activities was maintained by delaying more expensive stack development activities until FY 1982 and FY 1983.

The objective of these two contracts is to establish readiness to proceed into the next program phase, fullscale stack technology. Two smaller efforts, at ANL and ERC, are aimed at developing backups and alternatives to the concepts being developed by the major contractors. Technology base programs funding at universities and small businesses are also included.

Amount Budgeted in FY 1982:

The revised FY 1982 budget request includes $14,100,000 for Molten Carbonate Systems Development.

Feasibility:

The molten carbonate fuel cell power plant affords an option for obtaining efficiencies of 50 percent on gasified coal principally because of the performance potential of the fuel cell and the availability of high quality heat (1200°F) for a bottoming cycle. Efficiencies of 60 percent and higher are expected on methane, naphtha and methanol. The high temperature also provides broad applicability for industrial cogeneration. Previous applied research has indicated that technical development is feasible and has identified the technical issues. Resolution of these technical issues requires a focused, sustained effort with application of a "critical mass" of resources.

The current program is configured to achieve this level. A critical mass has been maintained in the FY 1981 budget by focusing on small-scale experiments and deferring higher cost stack development until FY 1982 and FY 1983. Technical progress has been excellent in the small-scale efforts resulting in a need to address the problems of a full-scale fuel cell (especially stacks). The FY 1982 and FY 1983 budget meets the requirements for dealing with these technical issues.

Capability:

This statement is based on current budget projections which represent a balanced program in Molten Carbonate Fuel Cell development. Project management for contracted efforts is provided through the DOE Chicago Operations Office with the technical assistance of Argonne National Laboratory. Current manpower levels are adequate for the necessary management of the program.

Outlay Effect:

None.

Fuel Cells

Question: The 4.8 MW test with Consolidated Edison in New York City is now over 80 percent completed. Is it fair to say that commitment of substantial private utility funding for fuel cell developmnent depends on the successful operation of this power plant?

Answer: Apart from funding by the Electric Power Research Institute and TVA, the private utilities participating in the National Program are providing very small amounts of funding for technology development.

The National Fuel Cell Plan includes a demonstration plant beyond the 4.8MW which is to be funded by TVA partially from revenue and partly from appropriations in the 1984-1986 time frame.

This demonstration will have a plant configuration which is coal gas fueled and used in cogeneration and will incorporate all the technology improvements now being sought under the National Program by DOE, TVA and EPRI. The plant will be of higher power density and higher efficiency than the 4.8MW operational feasibility plant of Con Ed. (Almost double the power density of the 4.8MW plant and of 45% to 47% efficiency as compared to 38% to 39% efficiency of the 4.8 MW plant.) In addition, the stack life of the TVA demonstration would be in the order of 4000 hours as compared to 2000 to 4000 hours life of the 4.8MW stack design.

DOE intends to complete the present 4.8MW project in cooperation with Con Ed, EPRI and UTC provided that the participants continue to assume an equitable share of the costs involved.

DOE, however, feels that the limited available Federal funds beyond the present 4.8MW project phase should not be spent on restacking the 4.8MW plant with new technology stacks, but be employed to fully support the technology development program seeking the higher power density more efficient and longer life technology.

There is no doubt that successful completion of the present phase of the 4.8MW project will have a strong influence on the commitment by the electric utility users to demonstrate and commercialize the new technology now being sought via private sector funding.

Question: For the last two fiscal years, Congress has provided funds for the implementation of a cost-shared 40 KW fuel cell field test. Despite explicit report language directing the Department to get this program underway, there is still no agreement between the Gas Research Institute and the Department of Energy and there is no contract for the procurement of hardware. What is the status of the 40 KW field test negotiations in DOE?

Answer: DOE is just as anxious as the participants to proceed with the field test program, however, it is essential that an agreement be reached with GRI's commitment to the project. At the present time, some minor programmatic issues and significant legal and management issues stand in the way of execution of this agreement.

DOE is attempting to hold a meeting with GRI by the end of May 1981 to negotiate these issues and finalize the agreement.

It should be noted that NASA, in support of DOE, has already published a Request for Proposal, received a proposal, completed the technical proposal evaluation and is awaiting resolutions on the DOE/GRI agreement before entering in final negotiations with UTC.

Field Test Program

Question: Isn't there a high level of private sector cost sharing in the field test program? Aren't those participating utilities who will share the field test cost anxious for the equipment to be procured and put on test?

Answer: Yes, there is an expected high level of private sector cost sharing in the field test program for FY 1982 through FY 1984. However, the bulk of the financial exposure in FY 1980 and FY 1981 is to be assumed by the government.

DOE is just as anxious as the participants to proceed with the field test program, but it is essential that an agreement be reached with GRI's commitment to the project. As the present time, some minor programmatic issues and significant legal and management issues stand in the way of execution of this agreement.

DOE is attempting to hold a meeting with GRI by the end of May 1981 to negotiate these issues and finalize the agreement.

It should be noted that NASA, in support of DOE, has already published a Request for Proposal, received a proposal, completed the technical proposal evaluation and is awaiting resolutions on the DOE/GRI agreement before entering in final negotiations with UTC.

MHD

Question: Finally, let me focus for a few minutes on the Magnetohydrodynamics program. The 1980 program level was $79 million, the revised 1981 level is $61 million, and you have proposed no funds for fiscal year 1982. Why?

Answer: The principal reason for the termination of the MHD development program was that, although it is a high-risk, long-term effort, it has only a marginally higher payoff relative to other electricity technologies under development. It does, however, entail much higher development costs. At the present time, the Department of Energy is performing research on three other coal-based electricity technologies--pressurized fluidized bed combined cycle, high temperature turbines for use with gasifiers, and molten carbonate fuel cells--all of which promise comparable levels of performance and estimated cost of electricity. Yet these other technologies involve much lower federal development costs and most will be available for commercial deployment much earlier than MHD.

Question: Over the years, what has been the total funding devoted to the MHD facilities in Montana and Tennessee? How much has been spent by each?

Answer: Approximately $100 million dollars ($37 million in construction) has been spent in placing the CDIF MHD facility in operation in Butte, Montana (operations have just been initiated). Approximately $50 million (including the cost of the superconducting magnet) has been invested in the CFFF MHD facility in Tullahoma, Tennessee (operations were initiated this year).

Question: If the Congress approves your budget request for 1982, where will we be in terms of completion of our original goals? How much will it cost to complete all phases of the program? How does this break down between Montana and Tennessee? Can you determine which, if any, of the two programs would be the most useful were we to close down just one of the two? Is this advisable?

Answer: The primary immediate goal of the MHD program was to complete critical component and subsystem tests at the CDIF and CFFF facilities to confirm the engineering feasibility of MHD power plants. If the Congress concurs with the Administration's proposed termination of the MHD program at the end of FY 1981, the tests at the CDIF and CFFF facilities will be immediately terminated.

To estimate the cost of completing the original MHD program (which focused toward the design, construction, and operation of a cost shared commercial demonstration plant with the DOE providing 70% of the cost) would be inappropriate with the recent refocusing of the Fossil Energy R&D program to permit industrial investment in precommercial activities. However, a MHD technology base program could be pursued at a reduced cost with the expectation that, if the latter were successful, industry might pursue the demonstration phase on its own (perhaps with support from the Synthetic Fuels Corporation). The first phase of such a program (described in the attached capability statement submitted to the House Committee on Science and Technology) would require approximately $35-40 million a year and would require about three years to complete. In this approach, $10 million a year would be needed to support the test program at the CDIF facility at Butte, Montana and $6 million to support the CFFF facility at Tullahoma, Tennessee. The latter test activities would be limited to the test articles on hand or in the "pipeline". The focus of the present test program at the CDIF is the MHD topping cycle (or power train). The focus of the present test program at the CFFF is the MHD bottoming cycle (or HRSR system) and environmental emission control. If one of these facilities were to be shut down, the critical data from the topping or bottoming cycle tests would be lost. With the test article already in place at the two already built facilities and operating, additional resources (time and money) would be required to modify one or the other facility to do all the work at one site (plus shut down costs for one of the facilities). Both test programs are needed to demonstrate the engineering feasibility of MHD systems. It would not be advisable to shut down one of the facilities until at least the ongoing test programs are completed, as described in the attached capability statement mentioned earlier.

Question: What would be the total costs associated with close-down of both facilities? How much for each separately? What would be the time-frame for close-down, assuming Congress approved both your fiscal 1981 rescission request and your 1982 budget request?

Answer: Preliminary estimates indicate that, if facility shutdown is initiated by June 1, 1981, the specific costs (anticipated to be covered with FY 1981 funds) will be:

	FY 1981	FY 1982
CFFF Facility Shutdown:	$2.5M	-
CFFF Maintenance in Mothballed Status:	-	$0.7M
CDIF Facility Shutdown:	$4.5M	-
CDIF Maintenance in Mothballed Status:	-	$0.7M
TOTAL	$7.0M	$1.5M
GRAND TOTAL	$ 8.5M	

CAPABILITY STATEMENT

Agency/Bureau: U. S. Department of Energy-Fossil Energy
Appropriation: Coal Technology (4501)/Magnetohydrodynamics (4514)
Activity: Magnetohydrodynamics (MHD)
Proposed amendment: Allocation of $37,800,000 to continue the development of an MHD technology base in FY 1982 at a minimal level.

Current program:

The present DOE MHD program is a commercialization-oriented, fully-integrated program focused on the development of the entire coal-pile to busbar MHD combined-cycle plant, encompassing the full R&D spectrum from research to large-scale commercial demonstration. The end objective of the program is to demonstrate the commercial feasibility of MHD power plants. The program has been pursued at an accelerated pace with the objective of having a commercial prototype plant (the ETF) on-line by the early 1990s.

Amount budgeted in FY 1982: None

Feasibility:

The Administration is recommending to the Congress that all program activities in MHD power development be discontinued at the conclusion of FY 1981. This decision reflects the fiscal austerity necessary to effectively deal with the current national economic situation, and a recognition that under these circumstances the Federal Government cannot afford to pursue all potentially promising long-term options. Accordingly, direct government funding of the activity is not proposed for FY 1982. The development of other very promising advanced coal technologies--such as high temperature gas turbines and fuel cells--will be continued and are expected to provide the capability for the improved utilization of coal in the electric power sector in the future.

Capability:

The Administration's FY 1982 budget request provides for a balanced overall fossil energy program. The proposed $37,800,000 amendment would permit the continued development of coal-fired MHD electric power systems at a technology base level. With the expectation that private industry should shoulder more of the large-scale precommercial actions needed to bring advanced fossil energy technologies (such as MHD) into the commercial market place, the reduced MHD program would focus on the completion of the ongoing tests and on establishing a suitable MHD technology to allow industrial commercialization of MHD power plants in the future.

Bench scale experiments will be carried out to define key technical/engineering considerations of power train and heat recovery-seed recovery components. Laboratory studies will be conducted to develop an improved understanding of the underlying phenomena governing key elements of a coal-fired MHD system. These efforts will be guided by the results of preliminary engineering analysis, systems studies, the inputs from two industry-led MHD power train technology development teams, and the National Users Group on MHD. At a constant per annum funding level of $35 to $40 million, it will require approximately 2 1/2 to 3 years to complete the described tests.

The results of the technology base program will provide the data base for a key programmatic decision point--whether or not to:

(1) Terminate the MHD program;

(2) Phase out of a major Federal Government MHD development role (with continued development to be pursued by industry);

(3) If the data base is not sufficient for industry to take over MHD development but the test data is encouraging, proceed with the operation of a 3 MWe integrated PDU for the purpose of a "proof of concept" demonstration. The B-Bay of the already constructed CDIF facility is ideally suited to be utilized in a PDU mode. The successful operation of a 3 MWe PDU may be sufficient to allow industry to then pursue the next phase of MHD development.

The specific programmatic elements would consist of the following:

(1) 1 MWe Bench Scale Test Program (Coal Fired Flow Facility)

   a. Power Train testing will be carried out to gain a better understanding of the key engineering considerations.

   b. Heat Recovery-Seed Recovery (HRSR) testing will continue to gain a better understanding of the key technical issues associated with the subsystem (i.e., heat transfer, seed recovery, emission control, materials, etc.).

(2) Scaling Confirmation Testing

   a. The 250 MWt AEDC testing program will be phased out in FY 1982 following completion of the ongoing test series.

   b. The IA test series in progress at the CDIF will continue. Completion of the entire IA test series using "current" hardware and at a reduced level of effort would occur in the FY 1983/1984 time frame.

(3) Base Technology-Limited Experimental work in support of 1 and 2 will be pursued at a scale of up to several hundred kilowatts to gain a better understanding of the key MHD technical issues--e.g., electrode durability, channel performance, combustor performance and durability, boiler durability, seed recovery, etc.

(4) Laboratory Studies - Laboratory investigations will continue with the objective of developing an improved understanding of the underlying phenomenon which govern key elements of a coal fired MHD system. Efforts will be focused on combustion kinetics, seed ionization kinetics, NOx formation and control, electrochemical erosion, magnetoacoustic instabilities, etc.

The MHD program funding would be distributed in the following manner (by category):

Open Cycle MHD	
CDIF Project	$10.0M
Engineering (Technology) Development	22.6M
ETF Project	0.0M
Systems Engineering	1.0M
Supporting Research	4.0M
Subtotal	$37.6M
Closed Cycle MHD	$ 0.2M
GRAND TOTAL	$37.8M

Outlay effect: FY 1982: $35 million

SUBCOMMITTEE RECESS

Senator McClure. Thank you.

That concludes this morning's hearing. The subcommittee will stand recessed until 9 a.m., Wednesday, May 13, when we will receive testimony from the Fine Arts Commission, the National Gallery of Art, and the Bureau of Mines.

Thank you very much.

[Whereupon, at 12 noon, Thursday, May 7, the subcommittee was recessed, to reconvene at 9 a.m., Wednesday, May 13.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1982

THURSDAY, MAY 21, 1981

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10:38 a.m., in room 1223, Everett McKinley Dirksen Senate Office Building, Hon. James A. McClure (chairman) presiding.

Present: Senator McClure.

DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

STATEMENT OF DOYLE FREDERICK, ACTING DIRECTOR

ACCOMPANIED BY:
- **DALE BAJEMA, ASSISTANT DIRECTOR FOR PROGRAMS**
- **JOSEPH GORRELL, DEPUTY BUDGET OFFICER, DEPARTMENT OF THE INTERIOR**
- **DR. DALLAS PECK, CHIEF GEOLOGIST**
- **DR. GEORGE GRYC, CHIEF, OFFICE OF NATIONAL PETROLEUM RESERVE IN ALASKA**

PREPARED STATEMENT

Senator McCLURE. Good morning. This is the time scheduled to hear the fiscal 1982 budget request for the U.S. Geological Survey. The request which totals $538,161,000 represents a decrease of some $55,232,000 from the 1981 appropriation to date.

Also pending is a supplemental request for $17,600,000, which is still in the process of being acted upon by the Senate, and a pay cost supplemental pending of $13,864,000.

Representing the Department this morning will be Mr. Doyle Frederick, Acting Director of the USGS. Mr. Frederick, please introduce your associates with you this morning and proceed to highlight your statement. The full statement will, of course, be included in full in the record.

[The statement follows:]

STATEMENT OF DOYLE FREDERICK

It is my pleasure to appear before you today to present the Fiscal Year 1982 budget proposal of the U.S. Geological Survey. The budget request involves three appropriations: Surveys, Investigations, and Research for programs which provide basic scientific data and maps concerning the Nation's lands, fuels, minerals and water resources, and supervision of the mineral leasing operations on Federal and Indian lands, including the Outer Continental Shelf ($529.5 million); Exploration of the National Petroleum Reserve in Alaska ($2.6 million); and Digital Cartography ($6.0 Million), a new proposed appropriation to support activities previously funded through Surveys, Investigations, and Research. Before addressing the Fiscal Year 1982 budget proposal specifically, I would like to briefly emphasize three areas which present very real challenges to the Survey, both now and in the future. Those areas are geologic hazards or what we call "real-time geology," the Geological Survey's involvement in the Nation's energy program, and streamlining of the Outer Continental Shelf (OCS) leasing process.

Challenge for Real-Time Geology

Preceded by a week of premonitory earthquake activity, Mt. St. Helens, in southwestern Washington, began to erupt on March 27, 1980. The reawakening of this Cascade volcano from more than a century of slumber focused the national interest on one of the most challenging problems facing the Geological Survey. Specifically, how can scientists and managers who deal in sciences with geologic time perspectives best respond to national needs for real-time Earth science information necessary for public decisionmakers to address emergency preparedness? The list of scientific problems ahead for real-time geology in the Survey is immensely challenging. What does the future hold for other potentially explosive volcanoes of the Cascade Range and Alaska? When and where will the next major earthquake strike California? When will the Ogallala aquifer supplying water to the High Plains be exhausted? These challenges are not limited to the prediction of volcanic eruptions, but have wide applicability for trying to forecast the future behavior of the Earth and the processes which shape it--for the prediction of earthquakes, glacial surges or retreats, exhaustion or contamination of ground water supplies, rapid changes in the flow of rivers and streams using measurements relayed via satellite, critical mineral assessment, and the impact of future climactic changes. These are but a few of the real-time geologic problems the Survey is addressing. Responsiveness will require the highest quality of geologic and hydrologic research to measure or estimate both natural and man-made dynamic forces and their ultimate effects on our Earth.

However, scientific competence and methodology alone are inadequate to combat the realities of geologic hazards and diminishing resources. The solutions to these problems must be addressed at all legislative and administrative levels--Federal, State, and local. Public officials must be aware of the issues, the scientific data which are in some cases highly inconclusive, and the options available to address the issues effectively. The Survey's planning efforts will reflect more aggressive programmatic involvement in the areas of hazard assessment, prediction, and mitigation, including necessary interagency coordination both within and outside the Survey with other organizations who share responsibility for dealing with real-time geologic phenomena which pose substantial hazards to life and property.

Involvement in the Nation's Energy Program

Continuing increases in world energy prices mandate national initiatives on many fronts to augment use of domestic energy resources. The Survey has a fundamental involvement in this important area. For instance, coal use is expanding as a major substitute for oil and gas and is being projected as a major potential source of hydrocarbons for synfuels development. Proven domestic coal reserves are more than ample to support these initiatives. However, coal production will have to almost double current levels if these goals are to be realized. In recognition of the necessity to increase coal production, a new Federal Coal Management Program was established by the

Department of the Interior on June 1, 1979, aimed at accelerating leasing and development of Federal and Indian coal lands. This program represents a resumption of competitive leasing which had been under an informal moratorium since 1971. The first successful coal lease sale under the new program took place in January, 1981; all six tracts scheduled for competitive leasing in the Green River-Hams Fork Region of Colorado and Wyoming were sold.

To ensure the success of future lease sales, the Survey has initiated efforts to implement efficiencies into its integrated coal program to provide more timely economic, geologic, and water resources information used for leasing decisions and supervision of postlease mining operations on Federal and Indian lands. These efforts include developing a new more cost-effective drilling methodology, and expanding the capability and public accessibility of the National Coal Resources Data System (NCRDS).

Streamlining OCS Leasing

Under the direction of Secretary Watt, we are taking actions to streamline the OCS leasing and permitting processes. Important changes to be made will result in greater emphasis on early entry of industry into high potential untapped areas, earlier reentry into other high potential areas, and incorporation of streamlined prelease procedures which will result in shorter lead-times to lease offerings and allow for increased size of offerings.

To achieve these results, the Geological Survey will change from prelease geologic hazard assessments, based on data obtained by the Government, to postlease hazard assessment only for those tracts which are leased, and on which operational activities are proposed. These assessments will be based on data provided by industry. This change will both accelerate leasing on the OCS and reduce Government expenditures. A second change will be in tract evaluation procedures which until now also have been done on a prelease basis. Under new streamlined procedures, the Geological Survey will make decisions on the acceptance and rejection of the high bids received based upon postsale screening processes involving evaluations of competition, comparable sales information, and resource economics. Finally, the streamling of postlease regulatory procedures is also being undertaken. The thrust of this effort is to eliminate any unnecessary regulatory burden on industry (and the Geological Survey) while maintaining appropriate environmental safeguards.

Secretary Watt is seeking public comment on these proposed initiatives at this time. He has also written the Nation's Governors seeking their support and assistance in this important endeavor. The Geological Survey, in the meantime, is taking action in order to be in a position to implement those initiatives which subsequently are adopted.

SURVEYS, INVESTIGATIONS, AND RESEARCH

NATIONAL MAPPING, GEOGRAPHY, AND SURVEYS

Intensified use of the Nation's land and natural resources is exemplified by the growing distribution of Survey-produced maps, now over 10 million copies per year. This trend is also accentuated by a rising demand for cartographic and geographic data in digital form as Federal land management agencies and other decisionmakers develop computer-based information and management systems requiring spatial data as a reference base. The Fiscal Year 1982 budget request for the National Mapping, Geography, and Surveys activity proposes a net decrease of $3.1 million. Of this amount, Digital Mapping base funds of $2.0 million are transferred to the proposed new legislation which would establish a revolving fund through which the program will be conducted. Programmatic increases requested for this activity include orthophoto products identified by the Bureau of Land Management to be used in the expedited transfer of lands to Alaska native organizations and individuals (+$0.3 million) and increased access and availability to the public of national cartographic and geographic information (+$0.5 million).

A proposed reduction of $1.9 million in the Modernization of Mapping Program will extend the completion dates for equipment and software development.

GEOLOGIC AND MINERAL RESOURCE SURVEYS AND MAPPING

In Fiscal Year 1982 we are proposing some increases for programs of geologic research. As I mentioned in my opening remarks, we believe these proposals represent exciting opportunities which span the range from immediate needs to wise investments for the future. The Fiscal Year 1982 budget for Geologic and Mineral Resource Surveys and Mapping requests program increases of $8.7 million. Increased funding of $2.1 million is requested for geologic hazards programs in order to intensify studies in earthquake hazards reduction ($0.8 million), to increase helicopter support vital to the operations of the Cascades Volcano Hazards program ($0.3 million), and expand research in ground failure and landslides through funded projects with State and local agencies to assure that data on potential ground failure hazards are applied to the most severe problem areas in an efficient and timely manner ($1.0 million). A $2.1 million increase is proposed for the geologic framework program to continue systematic analyses of the deep continental crust essential to an understanding of the occurrence and subsequent exploration of energy and mineral resources as well as the crustal patterns that control the origin of geologic hazards. An increase of $2.0 million for Mineral Resource Surveys is requested to accelerate a mineral and energy resource potential evaluation of the State of Alaska in response to the Alaska National Interest Lands Conservation Act ($1.0 million), and to revitalize research in the development of assessment techniques to improve discovery rates of metallic mineral deposits critical to National mineral independence ($1.0 million). Discovery rates for metallic minerals in the United States have shown a declining discovery/cost relationship over the last decade due to lack of new exploration techniques and targets for industry development - a trend which can only be reversed by increased basic research on U.S. mineral deposits as recognized in the National Minerals and Mineral Policy, Research, and Development Act of 1980. A net increase of $2.5 million is proposed for Energy Geologic Surveys which includes additional 1:100,000-scale mapping in the coal investigations program to meet deadlines in the Bureau of Land Mangement's land-use planning cycle for coal leasing decisions (+$3.0 million), and increased development of new exploration techniques to improve domestic recovery rates of uranium/thorium deposits and to develop state-of-the-art occurrence models for world-class uranium/thorium deposits in crystalline terrains (+$1.0 million). A partially offsetting reduction is proposed for the World Energy Assessment Program (-$1.5 million).

WATER RESOURCES INVESTIGATIONS

The demands for additional fresh water, safe disposal of wastes, and avoidance of inadvertent contamination of water sources present continuing challenges for our Water Resources Division. The Fiscal Year 1982 budget request for the Water Resources Investigations activity contains a net program increase of $0.4 million. A net increase of $1.3 million is requested for the Federal National Water Data System to initiate a program to develop techniques for mitigating and restoring contaminated ground water sources and provide technical support to Federal and State decisionmakers concerning underground disposal of toxic wastes (+$1.0 million), and to inititate a program to study the effects of acid rain on the water, land, and subsurface environment (+$1.6 million). A reduction of funds (-$0.8 million) from river quality assessments in the Federal data collection and analysis program is proposed to supplement an increased effort in water quality investigations within the Federal/State Cooperative Program. A partially offsetting reduction is proposed for data collection in the Regional Aquifer Systems Analysis activity (-$0.5 million). The Federal/State Cooperative program is a particularly effective and productive mechanism for addressing the Nation's water problems. It is proposed to initiate 90 additional water-quality studies including river quality assessments, ground water quality, urban runoff, lakes, wetlands, and energy development (+$2.8 million) while decreasing the data collection and analysis efforts in the coal hydrology program (-$2.7 million). The number of sites at which data are collected will remain virtually unchanged, but the frequency of measurements and the number of parameters measured at each site will be reduced. Studies in the area of oil shale hydrology will also be limited and postponed, allowing for a decrease of $1.0 million in that program. The existing hydrologic data collection network will be adequate to support regional hydrologic appraisals related to possible future oil shale development.

CONSERVATION OF LANDS AND MINERALS

The Nation's demand for energy continues to require increased effort on our part in support of leasing on Federal and Indian lands. A total program increase of $0.8 million is requested for this activity in Fiscal Year 1982. A net decrease of $3.7 million is proposed in the Outer Continental Shelf Lands activities related to tract selection and evaluation. The change from prelease geologic hazard assessments to postlease assessment of only those tracts leased using industry data will save $8.0 million from the original FY 1982 budget request. The revised request includes an additional $1.0 million to respond to the accelerated leasing I spoke of earlier. An increase of $2.1 million is requested in the OCS Regulatory Program for additional workload pertaining to supervision of oil and gas exploration, development and production operations, environmental protection, safety operations, and determinations of how industry can comply with legislative requirements to use the Best Available and Safest Technology (BAST) in OCS operations in the Arctic and deep oceans.

A net increase of $0.6 million is requested for classification, evaluation, and supervision activities on Federal and Indian lands. Increases are requested in order to enable us to respond to the surge of industry activity occurring in the exploration, development, and production of onshore oil and gas (+$1.2 million), to evaluate the oil and gas resource potential in Alaska required by the Alaska National Interest Lands Conservaton Act (+$0.9 million), and to address the rapid development of uranium resources and resulting problems on water supplies, mining waste and reclamation methods primarily affecting Indian lands (+$0.5 million). By performing tract evaluations routinely only postlease and in exceptional cases where bidding anomalies are noted, a decrease of $1.0 million in the NPRA Leasing Program is possible. New or different oil shale extraction methods are not anticipated in the near term, hence a $1.0 million savings is possible in the technology assessment aspects of the Oil Shale Leasing Program.

An increase of $1.8 million is requested for the Royalty Management program to provide for the continued implementation of an improved Royalty Management System to increase efficiency in collecting royalties on the production of all leasable minerals. The increase will provide for initiating the design and implementation of a production accounting system and an audit and financial system. Full implementation of the improved Royalty Management Program is planned for completion in Fiscal Year 1983.

EXPLORATION OF THE NATIONAL PETROLEUM RESERVE IN ALASKA

A total of $2.6 million is requested for this appropriation, a program decrease of $104.4 million. No funding is requested for the Evaluation and Assessment of NPRA, a program decrease of $105.5 million. The plan is to complete the program in fiscal year 1981 and initiate a leasing program for private exploration with the first sale in December of 1981. It is, therefore, proposed to terminate this program with funds appropriated in Fiscal Year 1981. With the completion of this evaluation program in Fiscal Year 1981, 28 exploratory wells will have been drilled, over 13,000 line-miles of seismic surveys will have been collected and interpreted, and the entire Reserve will be covered with a reconnaissance grid, with 16 indicated petroleum plays penetrated by at least one test well.

The total of $2.6 million is requested in Fiscal Year 1982 for the continued operation of the Barrow gas fields to maintain an adequate and uninterrupted supply of natural gas to the native village of Barrow, other native communities, and Federal installations at or near point Barrow, Alaska. Increased funds of $1.1 million are requested for this activity to offset costs resulting from losing the support services previously provided by the Office of Naval Research.

DIGITAL CARTOGRAPHY

Digital Cartography constitutes an exciting evolutionary advance--both in map production and in the use of cartographic data. A total of $6.0 million is requested for this new proposed appropriation previously funded through Surveys, Investigations, and Research under the National Mapping, Geography, and Surveys activity. Proposed legislation would establish a revolving fund through which the program will be conducted. To provide initial capital of $6.0 million for the fund, appropriations of $2.0 million for digital mapping are proposed for transfer from Surveys, Investigations, and Research, and additional funds of $4.0 million are requested. In response to the increasing demand for multiple-use digital cartographic data to meet State, Federal, and local user requirements for resource management decisions, the Survey is developing a Digital Cartographic Data Base designed to provide users with base categories of cartographic data in standard scales, accuracies, and formats suitable for computer based analyses. The additional funding of $4.0 million is requestd for increased data production to meet the highest priority needs of Federal Agencies and will focus on providing major base category data shown on 7.5-minute topographic maps.

Conclusion:

In conclusion, Mr. Chairman, the U.S. Geological Survey has as its future emphasis an increased responsiveness to the immediate needs of our Nation. Public awareness of the necessity of real-time Earth science information has been galvanized in the recent past by domestic energy shortages, the Mt. St. Helens' eruptions, and by localized floods and droughts. These events necessitate a redirection of some Survey efforts. These efforts are exemplified by our Geologic Hazards Program and our reevaluation of the integrated coal program. In addition, the Survey is actively studying methodologies for streamlining its required regulatory functions pertaining to coal, and oil and gas resources.

Our Nation faces serious challenges in meeting future needs for energy, minerals, and water. We take pride in the Geological Survey's capability to help the country meet those needs, now and in the future. The essential challenge facing the Geological Survey management is how to meet today's demands, and at the same time, build a base of knowledge and expertise which can provide the answers to tomorrow's questions--as well.

Perhaps the words of our late Director, Bill Pecora, regarding the discovery of natural resources needed by man, best illustrate the Survey's intent-- "The pace must be accelerated and no part of the Earth can be overlooked."

Mr. Chairman, I again thank you for this opportunity to appear before you today and am now prepared to answer your questions.

BUDGET REQUEST

Mr. Frederick. Let me introduce my associates at the table. We have also expert witnesses from each one of our program areas. I will introduce them as I call on them to answer specific questions, if that is okay with you.

Senator McClure. Certainly.

Mr. Frederick. Senator McClure, we are happy to appear before you this morning to talk about the Geological Survey budget for fiscal year 1982. If I might, let me highlight a few items in that budget, and I will not read from full text of the testimony.

First of all, the budget involves three appropriations. The larger one is surveys, investigations, and research. It amounts to $529.5 million. The second appropriation is the national petroleum reserve in Alaska, and that total request is $2.6 million. The final one—new one proposed is digital cartography. The total request there is $6 million.

Let me go back, if I might, and hit a couple of items on each one of those, just to give you the flavor of the budget itself and the kind of process that we went through in deciding what to ask for as far as our fiscal year 1982 budget was concerned.

One of the things, as a scientific organization in the earth sciences, we are faced with all the time is dealing with the appropriate balance between meeting the needs of the Nation on a near-term basis, and an illustration of those kinds of activities includes many of our energy and minerals-related kinds of activities, while at the same time dealing with the long-term research and technical development kinds of activities which provide the framework from which we would begin to meet near-term requirements as well.

We see in this particular budget our best attempt at folding those two requirements together and at the same time dealing with the current fiscal constraints that the Nation is faced with at the moment. And if I might, let me just mention several items included in the budget, and then I will answer whatever questions you might have.

In the area of our scientific investigations and research, we provide the basic framework of earth science information for decisionmaking across the country. Our basic mapping program provides maps and map-related information to guide decisionmakers in the wise use and development of public lands and total resources. We feel that we have an excellent mapping program. It is reasonably attuned to the real requirements of the country. At the moment, we are paying attention to Alaska, as an example, following the Alaska Lands Act to provide the kinds of information that the Department of the Interior and other agencies will need to make the many decisions that they have to make in the coming few years regarding the Alaska lands and the Alaska resources.

In the mapping area, in a different program element, we have a request for an additional $4 million to support the digital cartographic program. In addition to that, we have moved $2 million out of our base program into that area. We feel that digital mapping is basically an investment in the economy of the mapping program over a long period of time. It is basically the kind of effort that we need to invest in to provide information that people can use on a real time basis as well as to provide economies and efficiencies in our mapping program over time. We are quite excited about that particular program.

One thing I might mention in that regard, we are asking for legislation to establish a revolving fund for digital cartography. The purpose of the revolving fund is to provide resources from the sales back into the program. That legislation has been submitted to the Congress within the last 2 weeks, I believe. Dale says May 13.

We have on the other hand reduced our mapping program by about $2 million in response to the administration's initiative to reduce spending. That reduction will come out of our equipment modernization. We will defer some of the activities we had planned and stretch out their development.

GEOLOGIC AND MINERAL RESOURCES

In the area of geologic and mineral resources, there are two or three highlights I would like to mention. One of the areas has to do with hazards—earthquakes, volcanoes, ground failure. We have minor increases requested for our earthquake program, about $800,000, to concentrate efforts in the southern California area to look at the San Andreas fault, some additional funds for the volcano research program to provide helicopter transportation and the like, and a fairly sizable addition, $1 million, to ground failure programs that look at ground failure across the country. This program will be developed together with the States and the local communities to look at specific problems across the board.

We are not attempting to specifically deal with each and every problem ourselves. What we are rather doing is looking at the technology and demonstrating the technologies to those who ultimately must use them.

In addition to that, we are investing an additional $2 million in what we describe as our framework geology. We are looking at the deep crust of the United States, in particular the eastern and western overthrust belts, to look at potential energy and mineral resources as well as the structural development to give us clues of potential hazards. We are excited about that program as well.

In the area of mineral resources, we are particularly paying attention to the administration's concern and congressional concern about strategic and critical minerals. We have a request for an additional $1 million to support minerals assessment technology development, and we will be working with industry and the universities in looking at techniques, hopefully for providing better ways to discover additional minerals, those that are very critical to the United States.

Beyond that, we are increasing our program in Alaska to look at the mineral resources of Alaska, again to allow us to make the decisions that we need to make regarding the use of the Alaska lands.

Beyond that, in the geologic and mineral resources area, we have an increase for coal. This is the coal folio mapping program that is tied in directly with the Interior leasing schedule, and $1 million of that $3 million total that we are asking for in the coal area is directed to the national coal resources data system. The objective there is to collect information specifically to—that is available already, put it into the data base, and make it available to those that need to make the decisions. It will allow us to efficiently produce the maps that we need to make and provide information that is required for decisionmaking across the board.

WATER RESOURCES

In the water resources area, we are particularly paying attention to some of the problems that you have heard about over the past few weeks and months—toxic waste and acid rain. We have requests for increases in that area and a request for increases in the water co-op program to pay attention to water quality kinds of concerns across the board.

Also we are interested in the overall question of the drought in the country or the potential drought in the country. I am prepared to talk to you about that a little bit more, in case you are interested. We know that water resources will be a significant problem for this country over time, not only for agriculture but for energy development as well.

In the water resources area, to finance some of the increases, we have backed off on some of the energy hydrology areas. We feel we have the fundamental information to make the near-term decisions, and we are phasing down a bit and stretching out some of the other programs in coal hydrology and oil shale. We believe we will be able to meet the Department objectives as far as coal leasing is concerned.

In the area of lease management, there are two or three significant items I would like to call to your attention. On the Outer Continental Shelf, we are looking very hard at streamlining that process so that we can meet the objective of accelerating the leases on the Outer Continental Shelf and at the same time do that within the resources that are available to us. That has required a very strenuous look at our program.

OCS LEASING

The objectives will be almost a tenfold increase in the amount of acreage available for leasing in the OCS, perhaps even more than that. We believe we are going to be able to meet the requirements by shifting some of the burden to industry, relying on industry information a bit more, and providing the necessary checks by the Geological Survey specifically.

Two examples of that. In the area of hazards, we normally had collected information on a tract-by-tract basis ahead of the announced sale. Our new program will look at hazards on a regional basis and specifically deal with troublesome areas. But for the overall, we will rely on information that is collected after the sale and/or our best judgment at the time industry submits an application for permit to drill, for exploration, or permit for development. It is at that point that we will know what the actual problems might be. We will know what industry proposes as far as the technical development is concerned, and we believe we can make the decision at that point and have the wherewithal to do that. We are not proposing to actually relax on our concerns about hazards on the OCS; we are just proposing to shift the emphasis from a presale to a postsale kind of question.

RESOURCE EVALUATION

In the area of resource evaluation, to insure that fair market value is provided through the process, we are shifting from, again, a presale evaluation to a postsale evaluation. Generally the procedures will be similar to that that I have described for the natural hazards, and that is, we will do regional assessments across the board so that we can intelligently develop the program and then evaluate after the bids are in to insure that there is adequate competition.

Actual evaluation will assume several different forms including the fact that there are enough bids to assure competition. We will also go through a process of comparing the bids with similar tracts that have been sold heretofore and ultimately, if indeed we are not satisfied that adequate competition is provided, it will go through a postsale evaluation of a specific tract, based on information that we have been provided by industry and that we have collected ourselves. So there is a significant turnaround on that.

We believe using that streamlined approach, we will be able to adequately manage the increased program and provide the information that the Secretary needs to make the decisions that he has to make for making more of the OCS available on a near-term basis.

ON-SHORE OIL AND GAS

Shifting from OCS to on-shore, as you well know, we do have some significant problems on shore. We have several thousand leases that are working, and our responsibility is severalfold. One is to insure that we process quickly applications for permits to drill so we can get industry out working to find the oil and gas that we need, and the increased workload there is significant.

In addition to that, there is a lot of concern about the supervision of operating leases to make sure that we collect all of the royalties that are owed to the Government, and we especially have concern on the part of the Indians at the moment, and also that the operations are conducted in a safe manner as far as the environment is concerned, as far as the resource itself is concerned. So we have increases, fairly small increases, but we think reasonable increases in those areas to give us some additional funds to pay attention to those particular problems.

In addition to the on-shore lease management, I mentioned the collection of royalties. We have a sizable development and a sizable request for money as a supplemental for the 1981 budget, and an additional $1.8 million in the 1982 budget to develop a royalty management system. You probably have seen some estimates that suggest that perhaps we are not collecting as much money as is owed to the Federal Government, not necessarily due to fraud but because of the loopholes in the system actually that we have available. So we are paying attention to that. We are putting management stress on that particular problem, and we are also developing a modernized computer system that will allow us to effectively and efficiently handle the input from the payers and to sort through that process, look at what we consider to be significant indicators, and then follow up as appropriate.

We hope by that method we can do a reasonable job of royalty collection without having to add significant staff to the U.S. Geological Survey. So we are concentrating on that with top priority at the moment.

NPRA

In addition to that, I want to mention just one more activity, and then I will accept questions from you, and that is the national petroleum reserve in Alaska. The budget request at this point asks for money only to support our obligation to provide gas to the village of Barrow. That is $2.6 million for this particular budget. That is up from last year's budget because of two factors essentially. One is that the Navy is planning to pull out of the research laboratory, and in that move we will lose some support that has been provided.

Overall, we are phasing out the NPRA exploration program. We also had gotten some general umbrella support out of that particular program. In this case, in the fiscal year 1982 budget request, the Barrow gas is a program standing on its own and will cost us somewhat more money than has been used specifically for that purpose in the past. The costs are going up over time because of the stand-alone capacity there. The village is using more and more gas. It is a fairly cheap resource, and it will be very costly over time.

Senator, I have gone through our program quickly. I would be happy to stop and answer any questions that you might have.

Senator McClure. Thank you very much. We are confronted with a time constraint. Unfortunately, we will have votes starting in just a few minutes on the floor, and so I have only just a very few minutes. I will not ask you to wait, because there will be several votes and I will be gone for some time before I could get back under that plan. And so most of my questions will be submitted in writing.

PROVIDING GAS TO BARROW

I appreciate your testimony this morning, and I have two or three questions I would like to highlight.

You mentioned the gas to Barrow. Is the entire $2.6 million to provide gas to Barrow? What volume of gas is provided at that cost?

Mr. Frederick. Yes, sir. Let me call on George Gryc, our NPRA manager at the moment.

Mr. Gryc. We produce about 1 billion cubic feet a year.

Senator McClure. Have you made an analysis of what the alternative cost would be?

Mr. Gryc. There is a rather detailed report looking at coal and diesel and so on.

Senator McClure. How about LNG out of Cook Inlet?

Mr. Gryc. I don't think this study specifically addressed that; however, in comparison with diesel, equivalent Btu's from 1,000 cubic feet of gas as opposed to the equivalent in oil, the cost would be $2.6 per million cubic feet as compared to $14 for the equivalent to come out of Btu's. There is no question that the gas is cheaper.

Senator McClure. It costs $14 to provide diesel?

Mr. Gryc. To provide the equivalent.

Senator McClure. What would be the total cost? Instead of being $2.6 million, what would the total cost be to provide diesel?

Mr. Gryc. I cannot give you that figure offhand.

Senator McClure. Do you have that analysis?

Mr. Gryc. We have an analysis of that.

Senator McClure. Would you provide it for the record, please?

Mr. Frederick. We would be happy to provide additional information.

Mr. Gryc. Yes; of course, all of the utilities there are now gas-fired.

[The information follows:]

A Study of Alternative Fuel Sources for Barrow, Alaska

January 29, 1979

Husky Oil NPR Operations, Inc.
Suite 400
2525 "C" Street
Anchorage, Alaska 99503

Attention: Mr. C. C. Livingston

Gentlemen:

We transmit herewith our report entitled "A Study of Alternate Fuel Sources for Barrow, Alaska".

This report presents the results of a study to (1) determine the future energy requirements of the Barrow area and (2) determine the most cost effective fuel sources to satisfy those requirements. Our conclusions are presented herein along with supporting data.

We wish to express our appreciation for the opportunity to make this study. If there are any questions concerning the contents of the report, please advise.

Yours very truly,

Gruy Management Service Co.

Gruy Management Service Co.

INTRODUCTION

The end of an era of abundance of natural gas as fuel for light, power, and heat confronts Barrow, Alaska, and the nearby Naval Arctic Research Laboratory. For more than a decade, Barrow and NARL have consumed natural gas from reserves in the South Barrow field, within the National Petroleum Reserve in Alaska. Projections of increasing demand versus remaining reserves reveal that, in the absence of substantial new gas discoveries, Barrow and NARL must seek an alternative fuel supply.

To the present date, natural gas has fueled turbine-driven generators to provide electricity for lighting and power. Natural gas is piped directly to residences and buildings to fuel direct-fired space heaters. The total natural gas load is divided approximately 42 percent for electricity generation, 58 percent for space heating. Remaining proved gas reserves are sufficient to carry the space heating load alone through the year 2000. The electric power requirements must be filled from an alternative source, which could include natural gas if drilling is resumed and new reserves are found.

The time element to obtain an alternative fuel and relieve existing gas reserves of the power generating load becomes critical as deliverability of the existing wells declines. The inability of existing wells to continue to meet peak-demand requirements has become a matter of concern. Barrow's situation is further aggravated by the pressing need to replace an inadequate and unsafe gas distribution system. This system, installed hurriedly in 1964-65, has deteriorated to such an extent that it poses a constant threat to life and property.

In view of the above circumstances, an urgent survey of alternative fuel sources was ordered. The charge, given to Gruy Management Service Co., was "to determine the most cost effective fuel source to meet the requirements of Barrow to the year 2000". This report presents Gruy's findings, conclusions and supporting data.

SUMMARY

In seeking a suitable alternative energy source for Barrow, it was necessary to consider the current and future needs of the nearby Naval Arctic Research Laboratory. NARL has to date satisfied its fuel needs by drawing upon the natural gas reserves which have supplied Barrow.

Projections of future fuel requirements were made for both Barrow and NARL. The remaining life of existing proved natural gas reserves was determined to indicate the time available for procurement of an alternative fuel or for finding and developing additional gas reserves.

The remaining life for natural gas, in the absence of substantial new discoveries, is complicated by the fact that declining deliverability of wells will become a critical factor long before reserves are depleted. With only a very limited number of producible wells, the failure of one or two will put peak demand requirements beyond the capabilities of remaining wells.

Of the various fuel sources examined, several were eliminated due to obviously prohibitive costs. These include the acquisition of natural gas from Prudhoe Bay, necessitating a 260 mile pipeline requiring a capital outlay of $353 million. In this same category is fuel oil from the Umiat field, a distance of 220 miles and necessitating a capital outlay of $240 million.

Wind turbine generators are not considered a viable energy source at this time due to their dependence upon unpredictable and varying weather conditions. As development of this power source progresses it will deserve continuing consideration, principally as a supplement to the primary energy source. Serious consideration of nuclear power was dismissed for the present due to obvious problems related to construction and operation in this remote, environmentally delicate area of permafrost. The high technology nature of nuclear power operation and maintenance does not commend it to the area of inaccessibility that characterizes Barrow. Other energy sources such as geothermal, solar and thermal energy conversion were examined and dismissed with the recognition that only a proved energy source would be seriously considered at this time.

Potential alternative fuel candidates were reduced in number to five: (1) additional natural gas resulting from resumption of drilling activities in the Barrow area; (2) fuel oil imported from the "lower 48" or barged from Prudhoe Bay; (3) coal mined near Wainwright, Alaska, and transported overland or by barge to Barrow; (4) coal purchased in "lower 48" and transported by rail to a West Coast port, thence by barge to Barrow; and (5) electricity generated at a Wainwright coal mine and transmitted by overhead power line to Barrow.

The five candidate fuels and energy sources were then examined in detail as to relative costs of procurement and utilization. With respect to utilization, consideration was necessarily given to the capital required for new power generating equipment to accomodate a new fuel source. Complete replacement of existing equipment would be required if coal were adopted as fuel for power generation.

In developing comparative costs, it will be noted that future expenditures are not discounted nor is inflation considered. It is believed that a direct comparison of 1978 dollars, for each case, will yield a valid comparison for a short-term solution. For a long-range solution, the costs estimated for the natural gas option are probably more accurate than for those options which require purchase of energy into the future because the cost of energy through the year 2000 cannot be forecast with accuracy. It is generally acknowledged, however, that future energy prices will increase at a rate in excess of the rate of inflation.

FINDINGS

1. Barrow's future fuel requirements are projected to increase by three percent annually over the next twenty years. NARL's requirements are projected to remain level.

2. The future fuel requirements of Barrow and NARL, through the year 2000, are estimated at 28.5 trillion BTU's. This total will be distributed 16.2 trillion for space heating; 12.3 trillion for the generation of electricity.

3. Remaining proved natural gas reserves in the South Barrow gas fields are not sufficient to meet the full demands of Barrow and NARL, for both heating and electricity, beyond the year 1988. These reserves can, however, satisfy space heating requirements through the year 2000.

4. If space heating requirements are given priority in the utilization of remaining Barrow gas reserves, electric power generators must be fueled from a new source. This source may be additional gas reserves found in the Barrow area, fuel oil or coal.

5. Comparative costs of sources examined, to meet electric power generation requirements, are:

   a. New potential gas reserves in the Barrow area - $5.53/MMBTU
   b. Fuel oil through Seattle - $7.11/MMBTU
   c. Coal from Utah, via Portland - $7.14/MMBTU
   d. Fuel oil from Prudhoe Bay - $9.98/MMBTU
   e. Coal from Wainwright by barge - $14.16/MMBTU
   f. Coal from Wainwright by winter road - $15.83/MMBTU
   g. Electric power from Wainwright - $17.07/MMBTU
   h. Prudhoe Bay natural gas - $17.67/MMBTU
   i. Umiat fuel oil - $17.39/MMBTU

6. As presented in Table 1, comparative costs of the most economical fuel combinations to meet the total requirements of Barrow and NARL through the year 2000 are:

Space Heating	Power Generation	Total Cost	Avg. Unit Cost
Natural Gas	Natural Gas	$133,250,000	$4.67/MMBTU
Natural Gas	*Fuel Oil	$150,582,000	$5.27/MMBTU
Natural Gas	*Coal	$168,340,000	$5.90/MMBTU

*Imported from "lower 48"

7. The conversion to fuel oil for power generation will permit the continued use of existing generating equipment.

8. The use of coal for electric power generation will necessitate replacement of existing generating equipment.

9. Fuel oil will impose minimum new environmental problems. Coal will pose emission and ash disposal problems.

10. Opening a mine in the vicinity of Wainwright will create environmental problems of a severe and costly nature.

11. Fuel oil or coal imported from the "lower 48" can be obtained within two years. Replacement of generating equipment for adaptation to coal will require an additional year. Wainwright coal will require at least five years for development.

CONCLUSIONS

1. Of the alternative fuel sources available, development of additional nearby gas reserves offers the greatest all-around benefits. Close proximity of this fuel source enhances year round security. The in-place gas handling facilities will continue to be fully utilized. The cost, assuming reasonable drilling success, will be least.

2. Geological, engineering and seismic information indicate that further drilling will very likely find additional natural gas reserves in the Barrow area sufficient to supply Barrow and NARL through the year 2000.

3. Natural gas reserves found by further drilling will not likely be of a magnitude that will permit marketing outside the immediate Barrow area. The only foreseeable use is to supply the needs of Barrow and NARL.

4. If additional gas reserves are not developed, the most economical course open at this time is to (1) reduce the consumption of natural gas by limiting its use to space heating and (2) convert the electric power generating plants to fuel oil.

5. The most stringent measures possible should be taken to conserve the existing natural gas reserves. These measures should include maximum conservation in the power plants, including full utilization of exhaust heat. Residents should be urged to insulate their dwellings and practice energy conservation to greatest extent possible. An educational program should be implemented.

Population

In the preparation of this report, it was necessary to derive a projection of the future population trends for the community of Barrow. Despite a number of previous studies on Barrow by various Federal, state, and municipal agencies responsible for the activities of Barrow, there is no consensus as to the future growth of the community. This report attempted to weigh all of the varied viewpoints on Barrow's future growth and, using all available data, arrive at a reasonable forecast of the future population trend.

During the past forty years, Barrow has evolved from a small native trading village of approximately 300, dependent upon subsistence hunting, to a community of approximately 2,500 with an economy based almost completely on the many Federal and state agencies. An example of the importance of jobs in the public sector is the increase in the number of employees in the various levels of government from 37 to 361 in only a few years.[1] Also, since the passage of the Native Land Claims Settlement Act in 1971, the Arctic Slope Regional Corporation has been formed and has been successful to a degree in stimulating employment in the area. Much of the new employment created by the Arctic Slope Regional Corporation is in construction and heavy equipment operation, primarily for use in oil and gas activities on the North Slope. For Barrow to continue to grow and prosper, the level of governmental programs and oil industry activities must continue.

Due to continued changes in attitude of the American people and the elected officials in government, it is impossible to predict with confidence the future levels of governmental assistance to the Barrow area. This report assumed governmental assistance would remain at or near the present levels. For the purpose of this report, it was assumed that no large stimulus for additional growth would be provided by the government. This assumption was based on the awareness by the government of the obvious critical shortage of long term energy sources to supply even the present Barrow population and its natural increases during the next twenty years. A second and equally important assumption is that Barrow will not be dramatically affected by future oil and gas activity after the conclusion of the current NPR-A exploration program. This assumption is based on the fact that, to this date, no commercial hydrocarbon deposits have been discovered on the National Petroleum Reserve in the vicinity of Barrow. This tends to rule out Barrow as base of operation, and would seem to suggest that most, if not all, of the supply and support services necessary to maintain a large scale drilling and production operation would be centralized at the point of operations such as Camp Lonely or Prudhoe Bay. Should a commercial oil or gas discovery be developed inland on the NPR-A, Barrow could possibly be used as a supply depot and staging area. This possibility is discounted since the facilities at Camp Lonely are available and have proved to be adequate to handle an operation of this magnitude. Also, it would appear reasonable to assume that any production would be transported by pipeline eastward to tie in to the present Trans-Alaska Pipeline System. Any impact on Barrow would further aggravate the critical energy situation. This report assumes that the present permanent work force with the current level of unemployment would be adequate to handle minor increases in activity which Barrow may experience.

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[1] From Max Brewer, Chief of Operations NPR-A, Anchorage, Alaska.

In the past four years the population of the Barrow community* has increased from 1,977 to 2,471 persons. The largest single yearly increase was from 1977-1978 when the population increased by approximately 15 percent. This large increase was apparently the result of the opening of the new Arctic Slope Regional Corporation's headquarters and the employment opportunities which it presented. Also, within the past two years, the North Slope Borough has opened a large new office center, and a large general merchandise store has opened resulting in increased employment opportunities. Even though many varied projects have been proposed or planned which might stimulate growth, the future of most of these projects is uncertain.

Taking into account the above considerations, it is projected that the future population of Barrow will increase at a moderate rate of 3 percent per year through the year 2000. At this rate of increase, the population would increase to around 4,700 by the end of the century. The estimated population forecast is shown in Table No. 2 and plotted in Figure No. 1. This rate of increase coincides closely with estimates made by R. W. Beck for the Alaska Power Administration in 1977[1] and Alaska Consultants for the North Slope Borough in 1978[2].

The population growth estimate that differed significantly was that of the Arctic Slope Regional Corporation. The Corporation believes that Barrow will grow and develop as the hub of commerce for the entire North Slope and has projected the population of Barrow to reach 10,000 - 15,000 by the turn of the century.

The Arctic Slope Regional Corporation's explanation for this exceptional growth projection was that it would be the result of large scale hydrocarbon and mineral development. The Arctic Slope Regional Corporation has made a commitment to invest any income which it might receive from development on the Corporation's land holdings back into the area. An example of its intention is the $4 million building in Barrow to house the headquarters of Arctic Slope Regional Corporation. This is the only Regional Corporation out of the twelve formed to have its headquarters outside of Anchorage. This gives it a strong financial incentive to see Barrow grow and prosper.

For the purpose of this report, the growth predicted by the Regional Corporation was discounted because of the lack of any certainty that nearby

*This includes the incorporated area of both Barrow and Browerville.

1. "Energy Study for Barrow, Alaska", R. W. Beck & Assoc., August, 1977.
2. Technical Report Number 19 - Beaufort Sea Petroleum Development Scenarios, Man Made Environmental Impacts, 1978.

commercial hydrocarbons or mineral deposits would be found and developed. Also, due to the critical energy situation, Barrow may not be an ideal base of operations. Of course, it must be remembered that political and economic pressures could arise which might necessitate the use of Barrow as proposed by the Regional Corporation, thus increasing the urgency to obtain larger amounts of energy than projected in this report.

The current population of the Naval Arctic Research Laboratory is approximately 228 and the Dewline Station is 16. During the preparation of this report, it was learned that there is a good possibility that the activity at NARL will be reduced in the next few years as a cost cutting measure. The number of persons at NARL could be cut to as low as 10, retained only to guard and maintain the camp site. For the purpose of this report, however, it was assumed that personnel would remain at the current level throughout the period covered.

Energy Demand

At the present time, virtually all of the energy requirements for space heating and electrical power generation for both NARL and Barrow are supplied with natural gas produced from the South Barrow field. This has not always been the case. From 1949 - 1958, only the NARL facilities were supplied with natural gas. In 1958, all Federal Government buildings in Barrow were converted to natural gas. The residents of Barrow were given permission to use natural gas by Congress in 1962 and by 1965 a "temporary" gas distribution system was built and placed in operation. Also, in 1963 an electric distribution system was installed in Barrow to supply electricity to all residents.

Only within the past 13 years have the residents of Barrow had a central electric distribution system and natural gas for personal use. As might be expected, the demand for energy steadily increased as the native population expanded its use of modern appliances. The future demand for energy should continue to increase since residential consumption in Barrow is still below the average for the state.[1]

One factor which will affect the future energy demand of Barrow will be the increased number of new houses to help reduce overcrowding. Currently a large building program is underway and the overcrowding problem is being reduced. Due to the lifestyle of the natives of Barrow, it is projected that the residents per dwelling will stabilize at a higher figure at Barrow than the national average. The current number of residential dwellings is estimated at 550. This represents 4.49 persons per residence for 1978. It is assumed that this ratio will continue to decrease through 1982 at which time it should stabilze at a figure of 4.30 residents per household through the remainder of the period under consideration. From 1983 - 2000 the number of dwellings should increase at the same rate as the population growth. This information is outlined in Table No. 3.

A second factor which should affect energy demands will be the eventual replacement of all substandard housing which currently represents a large portion of the housing in Barrow. At this time, approximately 50 percent of Barrow's population live in substandard houses which are poorly insulated. Also, most of these old houses are not properly wired to handle large electrical loads. This has resulted in numerous fires caused by overloaded electrical circuits. The replacement housing will be comparable to the housing currently being constructed. The new houses are substantially larger and better insulated than the older homes. A review of BUECI's[2] actual statements for October, 1978, revealed that natural gas bills for heating were essentially the same for the larger new houses and the older, much smaller houses. This shows the importance of insulation on home heating requirements. The electric bills did show a significant increase in electrical consumption in the larger homes. This is the result of the houses being better wired to accept more lighting and electrical appliances. The older homes use an estimated 2400[3] KWH annually while the newer homes use approximately 4400[3] KWH annually.

[1] "Energy Study for Barrow, Alaska", R. W. Beck & Assoc., August, 1977.

[2] Barrow Utilities and Electric Cooperative, Inc.

[3] From BUECI records

For the purpose of this report, it is assumed that the substandard housing will be replaced at a rate of 10 percent per year from 1980 - 1990. After 1990, it is assumed that all housing in Barrow will meet modern standards. Also, it was assumed that the electrical consumption of each dwelling would increase at a rate of 3 percent per year over the 21 year period.

In estimating future energy requirements for commercial and government buildings, it was assumed that future growth in energy requirements in these areas would be directly related to growth in the population. This assumption is considered to be realistic and forecasts that growth in commercial and governmental activity will be moderate. At this time, plans are being proposed to build a large government center, new school complex, and new airport terminal. Even if plans materialize, the energy requirements for Barrow will not increase substantially since efficiencies in energy generation and distribution are being achieved.

In the estimation of future energy demands for NARL, it was assumed that current energy consumption would remain constant in the future. During the preparation of this report it was learned that a partial or complete shutdown of NARL was being considered. It would seem certain that in the event of even a major cutback, some of the buildings would remain in use, including buildings related to the Dewline Station, Power plant, and air field. For these reasons and the possibility that NARL may avoid any reduction of operations, the current energy demand was projected into the future. A reduction of activity at NARL would have an adverse effect on Barrow, since a number of Barrow citizens derive all or a portion of their livelihood from employment at NARL.

The total energy demand, expressed in MMCF of natural gas, for both Barrow and NARL is projected in Table No. 4. From this table, it is obvious that moderate growth is projected for the future energy requirements for Barrow between 1980 - 2000. The rate of growth in energy demand projected in this report is less than the actual rate of growth in energy consumption over the past several years. The reason for the projected moderation in the rate of growth of energy demand is a projected slowdown of population growth of Barrow, and a realization by all of the importance of energy conservation. BUECI has already begun a program to reduce excessive line losses in its electrical distribution system and has recommended the construction of a waste heat recovery system which will significantly increase the efficiency of the gas turbine engines currently being used in electric power generation.[4] It is assumed that a greater effort will be made to discourage waste and unnecessary use of energy. This could be accomplished by several methods such as incentives to better insulate buildings or disincentives such as increased energy costs.

Natural Gas From South Barrow Fields

Natural gas has proved that, when available, it is an ideal source of fuel for either heating or electrical generation requirements. The Barrow area has been fortunate to have access to this fuel to meet its energy demands. Unfortunately, unless demand is reduced or additional gas reserves discovered and developed, a critical gas deliverability problem will develop before 1990. Also, due to the fact that the gas is sold to Barrow and NARL at only a small fraction of the actual cost incurred by the Federal government to develop and operate the South Barrow gas fields, the need to fill Barrow's energy needs from a more cost effective source must be evaluated. Therefore, it is of the utmost importance to review the current situation and to establish cost estimates of continued exploration and development of gas reserves in the South Barrow area and determine the feasibility of continued gas deliveries to Barrow and NARL.

The current proved natural gas reserves in the South Barrow fields are located in two distinct areas approximately six miles apart and separated by an apparently nonproductive, highly faulted region called the "Disturbed Zone" thought to have been created by a meteor impact. (See Map No. 2). All production to date has been from wells located in the south area producing from the Lower Barrow Sand. Construction is scheduled to begin this winter on a pipeline to tie two new

[4] BUECI Preliminary Report - Addition to Power Plant. July, 1978.

wells in the east area to the present gathering system. These new wells should be on production by summer.

To date, production from the south field has totaled 11.3 BCF. The remaining proved reserves are estimated at approximately 14.0 BCF.[1] The reserves in the east field have been initially estimated at 11.5 BCF.[2] Therefore, the total remaining proved reserves, as of January 1, 1979, are estimated to be 25.5 BCF.

Currently, probable reserves are estimated to be 7.6 BCF.[3] These probable reserves are in the thin, low permeability Upper Barrow Sand encountered in the east field but never tested. Also, 18 BCF of potential reserves are estimated for areas which recent seismic work in the area[3] indicate to be promising.

Due to the constant withdrawals of gas from the south field, reservoir pressure has steadily declined. This is a normal characteristic of a depletion drive gas reservoir.[1] Unfortunately, as the pressure declines, the deliverability of the wells is reduced. The ability of present completions[4] to meet the projected deliverability requirements could become a serious problem in the near future. Available data suggests that with the existing wells in the Barrow fields the total projected demand will exceed deliverability capacity by 1988. If mechanical problems develop with any of the wells, the failure to meet energy demands could arise several years earlier. Therefore, to be able to supply the projected peak load energy requirements, additional wells will be required or the use of the natural gas must be restricted.

In order to conserve the presently existing proved reserves of natural gas, it would be most practical to restrict its use to the heating requirements of Barrow and NARL. Of the available options, continued direct deliveries of gas to homes would create the least impact on the native population. An alternative energy source would have to be found to meet the electric power generation requirements of the Barrow area.

For the purpose of this study, it was assumed that the earliest possible completion date of conversion would be the beginning of 1983. This time frame was used to determine the "minimum" natural gas requirements, or the amount of natural gas necessary to supply the projected energy demands of the Barrow area, assuming that by 1983 electrical power generation is met with an alternative energy source. This minimum case of natural gas requirements is outlined in Table No. 5. To meet these projected demands, a minimum of four additional development wells will need to be drilled to provide the necessary deliverability. Figure No. 2 shows the estimated deliverability and demand requirements for this minimum case.

The cost to drill four additional development wells and to continue the present field operations and maintenance through the year 2000 is estimated at $72.5 million. This results in an overall cost of $4.13/MMBTU. These cost estimates are set out in Table No. 6. This estimated development cost assumes optimum utilization of drilling equipment by reducing rig mobilization and logistical costs to a minimum. Therefore, the additional drilling and presently proposed workovers were forecast to be completed during 1980 - 1981. If the drilling and workover activity

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1. Update of reserves presented in "Reservoir Engineering and Geologic Study of the South Barrow Gas Field, Naval Petroleum Reserve No. 4, Alaska", H. J. Gruy and Associates, Inc., October, 1976.

2. "Reservoir Engineering and Geologic Study of the East Barrow Field, National Petroleum Reserve in Alaska", H. J. Gruy and Associates, Inc., December, 1978.

3. Unpublished reserve estimates by H. J. Gruy and Associates, Inc.

4. This includes the two wells awaiting pipeline connections in East Barrow Field (Well No. 14 and Well No. 19).

were carried out separately over a number of years, the total costs would be increased by an estimated $5 million.

If it is considered necessary to continue supplying natural gas for both heating and electric power generation at Barrow and NARL, additional gas supplies must be discovered and developed. It is believed that there are adequate probable and potential gas reserves in the immediate area, as shown on Map No. 2, to meet the predicted natural gas shortage. The probable reserves are those estimated for the thin, low permeability Upper Barrow Sand encountered in the east field. Electrical log and core analyses indicate this zone to be productive. Unfortunately, no production tests were run, so that the assumed production forecast for these reserves is based entirely on engineering and geologic judgment rather than past production history. The potential structures are based solely on seismic data and there is no certainty that hydrocarbon bearing sands will be encountered or that the structures will be found to exist as presently mapped.

Assuming that sufficient gas reserves can be found, an estimate has been prepared of the added costs to develop and produce gas to continue supplying the total energy requirements of the Barrow area. This option would require the drilling of six additional wells. Due to the exploratory nature of the drilling, it is assumed that two of the the wells will be dry holes and the other four producers. Costs of $5 million per well were assigned to the producing wells and $4 million per dry hole. In order to maximize the utilization of equipment and personnel, it was assumed that the drilling would be carried out during 1982 - 1983. This would allow the use of the same drilling rig used to drill the previously projected development wells, thus reducing the overall cost considerably by reduced rig mobilization and standby charges, and logistical costs. Based on this analysis, the cost to develop and produce the additional probable and potential reserves to supply the electric power generation requirements through the year 2000 is estimated at $60.75 million. This results in a unit cost of $5.53/MMBTU. These costs are presented in Table No. 7.

Adding the costs of the full development of the currently proved reserves and the probable and potential reserves results in a total cost of $133.25 million, or an overall unit cost of $4.67/MMBTU. Figure No. 3 shows the estimated deliverability and demand requirements for this case.

It must be emphasized that no assurance can be given that the necessary gas reserves can be found by additional exploratory drilling. Therefore, careful consideration must be exercised in comparing the projected cost estimates of this option versus the other alternatives available. The logistical advantage of having the Barrow and NARL energy source close by, the substantial financial savings, and obvious convenience and acceptability by the public sector must be weighed against the potential risk that the necessary reserves will not be found by additional drilling. Therefore, it would appear to be prudent to start exploratory drilling as soon as operationally feasible to prove or rule out the existence of additional reserves. This would allow time to select and implement a program to supply Barrow with an alternative fuel, in the case that additional drilling fails to prove sufficient reserves.

Natural Gas From Prudhoe Bay to Barrow Area

Due to the abundance of natural gas available at Prudhoe Bay, an effort was made to prepare a cost estimate to construct and operate a gas transmission line from Prudhoe Bay to Barrow. The approximate route is shown in Map No. 3. Due to the extreme conditions to be encountered, relatively long distance, and small volume of gas required, the overall cost and the unit cost for the fuel proved to be prohibitive. The total cost of the project through the year 2000 is estimated at $406.3 million. This equates to a unit volume cost of $17.67/MMBTU. A complete outline of the costs by years in included in Table No. 8.

A brief preliminary study of this method was prepared by an engineering firm in Anchorage, Alaska, familiar with arctic pipeline operations.* The total cost to construct an 8-inch gas transmission line from Prudhoe Bay to Barrow was estimated at $326.6 million. This cost has only 10 percent for contingencies and unclassified costs. It is felt that a more realistic cost estimate would have about 20 percent for contingencies to cover the possibility of major problems or design changes. For this reason the total capital investment has been increased to approximately $353 million. It is estimated that the yearly maintenance and operational expenses would average $1.9 million per year. Due to the fact that at this time no market is available for gas at Prudhoe Bay, the purchase price was assumed to be $1.00/MCF. This figure may prove to be slightly inaccurate but will have no appreciable effect to the unit cost of the fuel due to the high capital expenditures. An explanation of the actual costs is included in the Appendix.

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*Bison Enterprises, Report of December, 1978.

Fuel Oil Barged From Seattle

One of the most reasonable methods to supply the energy demands of the Barrow area is by barging fuel oil from the "lower 48". The advantages of this energy source include reduced time to implement, minimum capital expenditure, and less impact on the environment than would be created by coal. The disadvantages of this method are possible oil shortages in future years which could reduce the availability of arctic grade fuel oil and greatly increase the cost. Another possible disadvantage is that the ice may not break up in one year and thus prevent barges from reaching Barrow.

A principal advantage of barging fuel oil to supply all or part of Barrow's energy needs is that this method requires the least time to fully implement. It is estimated that this method could be fully implemented in two years to handle electrical generation requirements. This assumes that action is taken early enough to allow purchase and delivery in time to make the annual barge haul to the North Slope of materials and equipment for construction of storage facilities at Barrow during the first year. Also during the first year, the back-up generators at BUECI must be converted to run on fuel oil. This would require only minor mechanical alterations. Assuming that all necessary equipment and supplies arrived at Barrow during the first available barging season, the storage facilities would be ready to receive the shipments of fuel oil by the following barge season, and at that time Barrow and NARL electric power generators would be converted from natural gas. If it was decided to convert all of Barrow's and NARL's energy requirements to fuel oil, it would take at least three years. This is caused by the many problems that would be encountered in converting the individual homes and businesses to fuel oil. This process would require the change out of most heating systems and cooking stoves, which would be time consuming and costly. The time frames shown above would require optimum planning to be applicable. It would be imperative that precise planning and scheduling be used to insure that all necessary equipment and supplies make the barge run. The miscalculation or oversight of any one detail could postpone the finish of the project by a full year.

The second advantage of this method is the minimum capital required. It is estimated that total capital expenditures would run approximately $8.5 million to supply the electrical power generation requirements and $24.5 million to supply the total energy requirements of Barrow and NARL. The first figure represents the cost to build storage to hold 276,000 barrels of fuel oil, the necessary facilities to offload the barges, and all costs associated with converting and supplying BUECI and NARL electric generators with fuel oil. The second and larger amount represents the cost to build a storage facility to hold 616,000 barrels of fuel oil, necessary facilities to offload barges, and all costs associated with the complete conversion of Barrow and NARL from natural gas to fuel oil. This would entail the replacement of most of the heating systems and cook stoves in the individual homes and businesses. Even though these costs are high, this method would require a much lower initial capital expenditure than any other alternative under consideration.

The third advantage of this method is that it would create the least impact to the environment of any of the alternatives proposed which entail bringing in a fuel source from outside the Barrow area. The use of low sulfur fuel oil should not create major emission problems as would be the case with coal. The use of fuel oil would allow the continued use of the present electric power generating facilities and not require the design and construction of a new power plant on Barrow's limited townsite. As large volumes of fuel oil are already being barged to areas on the North Slope, the objections by environmentalists should be minimal.

The major disadvantage of this method to supply Barrow's energy requirements is the everpresent possibility that the Arctic icepack will prevent the annual barge shipments from reaching Barrow. Reliable sources project this occurrence to happen on the average of once every ten years, the latest occurrence being in 1975. Since Barrow would be dependent on fuel oil, it would be necessary to have supplies on hand to last for two years. Therefore, in the preparation of the cost estimates, storage facilities were designed to handle the largest two year demand period (1999 - 2000).

Disadvantages of this source of energy are potential future shortages and the inability to predict future fuel costs with accuracy. It would be unrealistic to expect that suppliers would contract the delivery of fuel oil at a fixed price for an extended time into the future. This could become a serious and expensive problem in future years if the necessary purchases would have to be made in times of critically short supplies.

For the purpose of this report, two separate cases are presented. The first case assumes that fuel oil is used to supply energy for the electric power generation requirements of both Barrow and NARL. It was assumed that the conversion from natural gas to fuel oil would be accomplished by 1983. The total capital and operating costs for this are presented in Table No. 9 and total approximately $78 million. This represents a unit cost of $7.11/MMBTU. The second case assumes that fuel oil would be used to meet the total energy requirements of Barrow and NARL. This changeover to fuel oil is also assumed to be accomplished by 1983. The total cost for this case is estimated to be $192.9 million as presented in Table No. 10. This results in a unit cost of $7.63/MMBTU.

Fuel Oil Barged from Prudhoe Bay

A topping plant is currently in operation at Prudhoe Bay and offers an alternative to the acquisition of diesel fuel from the "lower 48". Inquiry of the plant operator reveals that a quantity sufficient to satisfy Barrow's electric power generation needs is available. The currently quoted price is 82 cents per gallon, delivered to nearby storage provided by the purchaser.

The conditions and problems in this alternative are identical to those applying to "lower 48" fuel oil except that Barrow storage of 276,000 barrels, a two year supply, must be duplicated at Prudhoe. This will entail an additional investment of $8.5 million. The annual operating and maintenance costs at Prudhoe will exceed those at Barrow, and are estimated at $500 thousand per year, for an 18 year total of $9 million. This will be in addition to the Barrow operating costs of $300 thousand annually.

Commercial sources have quoted 13 cents per gallon to barge fuel from Prudhoe to Barrow. The delivered cost thus amounts to 95 cents per gallon ($39.90/bbl.) as compared with 78 cents ($32.75/bbl.) for fuel barged from Seattle.

Cost totals are summarized below. These may be compared with "lower 48" totals set out in Table No. 9.

Delivered cost of an 18 year supply of diesel fuel -	$ 78.24 million
Operating expense, Barrow and Prudhoe -	14.40 million
Capital costs, Barrow and Prudhoe -	17.00 million
Total 18 year cost -	$109.64 million
18 year average cost -	$ 9.98/MMBTU

Demurrage charges on barging equipment will reach excessive levels if weather conditions cause prolonged delays that prevent return of the equipment to ice-free bases.

Fuel Oil By Pipeline From Umiat

A possible alternative fuel for the Barrow area could be refined fuel oil from the oil deposits in the vicinity of Umiat. Numerous wells were drilled by the U. S. Navy in this area during the late 1940's. At that time, significant oil reserves were reported for a group of sands in and just below the permafrost zones from depths which varied from 450-1000 feet. The published estimates of recoverable reserves differ widely. The Bureau of Mines in 1952 estimated recoverable reserves of 122 million barrels.[1] The same year Standard Oil of California reported recoverable reserves of only 29.4 million barrels.[2] This much smaller volume would still be more than ample to supply Barrow's energy requirements for many years.

Cost estimates were prepared for the drilling and operation of the necessary oil wells and the construction and operation of a small topping plant to refine the crude oil into Arctic Grade fuel oil. A preliminary cost estimate to construct a 6" pipeline from Umiat to Barrow was prepared by a firm in Anchorage, Alaska, familiar with arctic operations.[3] The total cost of the operation was estimated to be $400 million. This represented a cost of $17.39/MMBTU. These costs are presented in Table No. 11 and in the Appendix.

Due to the extremely high costs, this alternative does not appear practical at this time. Also, before this method could be considered as a true alternative, much additional testing would be required to verify the results of the limited testing done on the wells almost thirty years ago.

Fuel Oil From Simpson Area

The Simpson area was one of the first areas where oil was discovered on the National Petroleum Reserve. There are numerous oil seeps at Simpson and oil was found in several core holes at shallow depths in the permafrost zone. Due to the limited data available, it is impossible to accurately determine the amount of the Simpson reserves. The location of the oil in the permafrost would greatly restrict the production capability and create extreme operation problems. The oil deposits are only 60 air miles from Barrow, but due to the position of Dease Inlet any pipeline route would be increased to well over 100 miles.

For the above reasons, it was determined that the Simpson area oil deposits would not be a secure source for Barrow to rely on for its energy requirements. Therefore, no cost estimates were developed on this alternative.

Coal

Two coal sources were examined in detail, on the basis of feasibility and cost. One involves the establishment of a strip mine in the near vicinity of Wainwright, some 110 miles southwest of Barrow. The other involves the purchase of coal from mines in Utah and/or Wyoming.

Robert C. Bottge, of the Alaska Field Operation Center, U.S.B.M., Juneau, Alaska, in a recent report titled "Coal As An Energy Source For Barrow, Alaska" determined coal deposits near Wainwright to be adequate for Barrow's requirements. Bottge's cost estimates, however, are considered to be unrealistically

1. "Recoverable Petroleum Reserves in the Umiat Structure, Navy Pet-4 Alaska". Bureau of Mines. June 1, 1951.

2. Review of Bureau of Mines Report on Umiat Reserves by Standard Oil of California, February, 1952.

3. Report Prepared by Bison Enterprises, December, 1978.

low, based upon costs experienced to date in the Barrow area, and do not take into account the many special conditions imposed upon operations within the National Petroleum Reserve in Alaska. Further, Bottge apparently visualized the mining operation to be of a "poor boy" nature, using minimum equipment and casual labor.

Should Barrow and NARL become dependent upon Wainwright coal for light and power, and possibly heating, the mining and delivery of coal to Barrow must be of absolute dependability. It is largely because of this that a number of costly safeguards are built into the cases and cost estimates reported herein. Of special significance are the following items:

1. Additional camp facilities are provided for on-site housing and sustenance at an added cost of approximately $2 million.
2. An all weather gravel road is planned from the mine to Wainwright to permit summertime coal transportation for barging to Barrow. This road would also be required for summertime transport of heavy equipment to the mine. Added investment for this road - $5 million.
3. A nearby air strip is planned, at an estimated cost of $3 million.

The addition of these items, and their attendant costs, makes coal mining on the scale required prohibitively expensive. These findings are reflected in Tables 12, 13 and 14.

An alternative to transporting Wainwright mined coal to Barrow was examined, this calling for the construction of a coal fired electric generating plant at the mine site. In this instance, 110 miles of high voltage power line to Barrow would be constructed. A capital investment of $37 million for the power line alone makes this alternative impractical. The cost projection for this case is presented in Table 15.

At the present time, the most cost effective course of acquiring coal for consumption at Barrow is to purchase it from existing mines in Utah or Wyoming. Despite almost 5000 miles of transportation, (one thousand by rail, 3800 by water) the present day cost could be considerably under that involved in mining at Wainwright and transporting either by barge or winter road to Barrow.

It is pointed out that the conversion to coal for generation of electricity will entail the replacement of existing generating equipment. Considering an ultimate 10,000 KW electric generating requirement, this investment will total $30 million and is accounted for in cost comparisons.

Comparative costs of coal under several conditions examined are:

(1) "Lower 48" coal, rail and barge to Barrow	$ 7.14/MMBTU
(2) Wainwright coal, barged to Barrow -	$14.16/MMBTU
(3) Wainwright coal, trucked to Barrow -	$15.83/MMBTU
(4) Electricity, Wainwright to Barrow -	$17.07/MMBTU

This study has concluded that the only practical way to utilize coal at Barrow is to fuel a central power generating plant. A concentrated area of storage and use, removed from Barrow proper, will permit implementation of emission control and ash disposal measures necessary to protect the environment. Conversely, burning coal in several hundred individual homes and buildings will not permit effective environmental regulation. Also, the delivery of many small lots, of one to two cubic yards, to individual users will increase the price of coal by at least ten dollars per ton. The cost to convert homes and buildings from natural gas to coal is estimated at $7000 per unit, for a total additional cost of approximately $4.2 million.

An alternative coal source, for future consideration, is the commercial open-pit mine at Healy, Alaska, which currently supplies coal to Fairbanks. Healy coal could move by rail to a suitably equipped Cook Inlet port, thence by barge to Barrow. The over-water distance to Barrow is approximately 1,300 miles less than the Portland-Barrow distance. However, as there are presently no port facilities available to store and barge-load coal in the quantities needed, this alternative was not pursued further.

All Electric System

An all electric energy system for Barrow and NARL, wherein electrical space heating would be added to the lighting and power load, was examined. Converting gas to electrical energy for space heating will increase the quantity of gas consumed five-fold. This increased quantity can be reduced by replacing existing generating equipment with a more efficient steam power system. Conversion to steam can reduce fuel consumption to approximately one half that of the existing gas turbine system.

For an all electric system, generating capacity must be increased from the forecast level of 10,000 KW, for light and power only, to a total of 60,000 KW. This amount of capacity is required to meet peak load demand with one 10,000 KW generator down for maintenance.

The capital required for a 60,000 KW steam power plant installed at Barrow will total approximately $180 million. As it is obvious that fuel requirements and capital costs for an all electric system are prohibitive, no cost projections were made. However, the fuel requirements by year for gas, fuel oil, and 11,000 BTU per pound coal are presented in Table 17.

TABLE NO. 1
ESTIMATED COSTS TO SUPPLY VARIOUS FUELS TO BARROW AND NARL

	SPACE HEATING REQUIREMENTS					ELECTRIC POWER GENERATION REQUIREMENTS						
Year	BTU's Required (Billions)	Natural Gas MMCF	Gas Annual Cost M Dollars	Fuel Oil M Bbls.	Oil Annual Cost M Dollars	BTU's Required (Billions)	Natural Gas MMCF	Gas Annual Cost M Dollars	Fuel Oil M Bbls.	Oil Annual Cost M Dollars	Coal M Tons	Coal Annual Cost M Dollars
1980	614	614	$ 15,000*		$	447	447	$		$		$ 1,500*
1981	629	629	15,250*			459	459					24,000*
1982	644	644	1,750		16,040*	471	471	17,250*		8,460*		7,538*
1983	656	656	1,750	117.4	4,655	474	474	24,750*	84.6	3,071	26.3	2,613
1984	671	671	1,750	120.1	4,736	487	487	750	86.9	3,146	27.0	2,679
1985	685	685	1,750	122.6	4,825	501	501	750	89.4	3,228	27.8	2,754
1986	699	699	1,750	125.1	4,907	515	515	750	91.9	3,310	28.6	2,829
1987	715	715	4,750	127.4	4,983	530	530	750	94.6	3,398	29.4	3,883
1988	729	729	1,750	130.5	5,284	546	546	3,750	97.5	3,493	30.3	2,989
1989	746	746	1,750	133.5	5,183	563	563	750	100.5	3,591	31.3	3,083
1990	762	762	1,750	135.9	5,257	578	578	750	103.2	3,680	32.1	3,158
1991	779	779	1,750	139.6	5,382	596	596	750	106.4	3,785	33.1	3,252
1992	796	796	4,750	142.6	5,480	613	613	750	109.4	3,883	34.0	4,315
1993	814	814	1,750	144.7	5,749	629	629	750	112.3	3,978	34.9	3,422
1994	833	833	1,750	148.5	5,673	647	647	3,750	115.5	4,083	35.9	3,516
1995	851	851	1,750	152.1	5,791	666	666	750	118.9	4,194	37.0	3,619
1996	871	871	4,750	155.7	5,910	685	685	750	122.3	4,306	38.1	3,722
1997	891	891	1,750	159.0	6,017	706	706	750	126.0	4,427	39.2	4,804
1998	912	912	1,750	163.2	6,355	727	727	750	129.8	4,551	40.4	3,939
1999	933	933	1,750	166.3	6,256	749	749	750	133.7	4,679	41.6	4,051
2000	955	955	1,750	170.0	6,377	773	773	750	138.0	4,820	42.9	4,174
Total	16,185	16,185	$ 72,500	2,554.1	$ 114,860	12,362	12,362	$ 60,750	1,960.9	$ 78,082	609.9	$ 95,840

SUMMARY OF COSTS	SPACE HEATING		POWER GENERATION	TOTAL $(THOUSANDS)	AVG. UNIT COST
	Natural Gas	plus	Natural Gas	133,250	$4.67/MMBTU
	Natural Gas	plus	Fuel Oil	150,582	$5.27/MMBTU
	Natural Gas	plus	Coal	168,340	$5.90/MMBTU

*Capital Costs

TABLE NO. 2
ESTIMATE OF BARROW/BROWERVILLE POPULATION

1980 - 2000

YEAR	POPULATION
1974	1,977 actual
1975	1,977 actual
1976	2,092 actual
1977	2,144 estimated
1978	2,471 actual
1979	2,545 estimated
1980	2,621
1981	2,700
1982	2,781
1983	2,864
1984	2,950
1985	3,039
1986	3,130
1987	3,224
1988	3,321
1989	3,420
1990	3,523
1991	3,629
1992	3,738
1993	3,850
1994	3,965
1995	4,084
1996	4,207
1997	4,333
1998	4,463
1999	4,597
2000	4,735

TABLE NO. 3
ESTIMATE OF NUMBER OF DWELLINGS IN BARROW/BROWERVILLE

1980 - 2000

YEAR	POPULATION	RESIDENCES	PERSONS/RESIDENCE
1974	1977 actual	350	5.65
1975	1977 actual	400	4.95
1976	2092 actual	410	5.10
1977	2144 estimated	460	4.66
1978	2471 actual	550 estimated	4.49
1979	2545	572	4.45
1980	2621	596	4.40
1981	2700	621	4.35
1982	2781	647	4.30
1983	2864	666	4.30
1984	2950	686	4.30
1985	3039	707	4.30
1986	3130	728	4.30
1987	3224	750	4.30
1988	3321	772	4.30
1989	3420	795	4.30
1990	3523	819	4.30
1991	3629	843	4.30
1992	3738	869	4.30
1993	3850	895	4.30
1994	3965	922	4.30
1995	4084	949	4.30
1996	4207	978	4.30
1997	4333	1008	4.30
1998	4463	1038	4.30
1999	4597	1069	4.30
2000	4735	1100	4.30

TABLE NO. 4
PROJECTED GROSS NATURAL GAS REQUIREMENTS FOR BARROW & NARL

1980 - 2000

Year	Barrow Htng. Req. MMCF/Yr.	NARL Htng. Req. MMCF/Yr.	Barrow Power Plant MMCF/Yr.	NARL Power Plant MMCF/Yr.	Total Energy Req. MMCF/Yr.
1980	414	200	247	200	1,061
1981	429	200	259	200	1,088
1982	444	200	271	200	1,115
1983	456	200	274	200	1,130
1984	471	200	287	200	1,158
1985	485	200	301	200	1,186
1986	499	200	315	200	1,214
1987	515	200	330	200	1,245
1988	529	200	346	200	1,275
1989	546	200	363	200	1,309
1990	562	200	378	200	1,340
1991	579	200	396	200	1,375
1992	596	200	413	200	1,409
1993	614	200	429	200	1,443
1994	633	200	447	200	1,480
1995	651	200	466	200	1,517
1996	671	200	485	200	1,556
1997	691	200	506	200	1,597
1998	712	200	527	200	1,639
1999	733	200	549	200	1,682
2000	755	200	573	200	1,728
TOTAL	11,985	4,200	8,162	4,200	28,547

TABLE NO. 5
PROJECTED NATURAL GAS REQUIREMENTS FOR BARROW & NARL ASSUMING ELECTRICAL POWER GENERATION REQUIREMENTS CONVERTED TO ALTERNATIVE FUEL

1980 – 2000

	Space Htg. Requirements		Electric Power Generation		
Year	Barrow MMCF/Yr.	NARL MMCF/Yr.	Barrow MMCF/Yr.	NARL MMCF/Yr.	TOTAL MMCF/Yr.
1980	414	200	247	200	1,061
1981	429	200	259	200	1,088
1982	444	200	271	200	1,115
1983	456	200	0	0	656
1984	471	200	0	0	671
1985	485	200	0	0	685
1986	499	200	0	0	699
1987	515	200	0	0	715
1988	529	200	0	0	729
1989	546	200	0	0	746
1990	562	200	0	0	762
1991	579	200	0	0	779
1992	596	200	0	0	796
1993	614	200	0	0	814
1994	633	200	0	0	833
1995	651	200	0	0	851
1996	671	200	0	0	871
1997	691	200	0	0	891
1998	712	200	0	0	912
1999	733	200	0	0	933
2000	755	200	0	0	955
TOTAL	11,985	4200	777	600	17,562

TABLE NO. 6

COST PROJECTION TO PRODUCE PROVED RESERVES FROM SOUTH BARROW FIELDS

(All Amounts are in Thousands)

	Operating Expenses	Workover Costs	Additional Drilling	Addition Prod. Fac.	Total Field Expenses
1980	$1,500	$ 1,500	$10,000	$ 2,000	$15,000
1981	1,750	1,500	10,000	2,000	15,250
1982	1,750				1,750
1983	1,750				1,750
1984	1,750				1,750
1985	1,750				1,750
1986	1,750				1,750
1987	1,750	3,000			4,750
1988	1,750				1,750
1989	1,750				1,750
1990	1,750				1,750
1991	1,750				1,750
1992	1,750	3,000			4,750
1993	1,750				1,750
1994	1,750				1,750
1995	1,750				1,750
1996	1,750	3,000			4,750
1997	1,750				1,750
1998	1,750				1,750
1999	1,750				1,750
2000	1,750				1,750
TOTAL	$36,500	$12,000	$20,000	$ 4,000	$72,500

TOTAL ESTIMATED GAS PRODUCTION 1980 - 2000 - 17,562 MMCF

AVERAGE COST OF NATURAL GAS - $4.13/MMBTU

TABLE NO. 7

COST PROJECTION TO DEVELOP AND PRODUCE ADDITIONAL PROBABLE AND POTENTIAL RESERVES IN SOUTH BARROW AREA TO MEET ELECTRICAL GENERATION REQUIREMENTS

(All Amounts are in Thousands)

	Drilling Costs	Production Facilities	Operating Expenses	Workover Expenses	Total Field Expenses
1980					0
1981					0
1982	$ 14,000	$ 3,000	$ 250		$ 17,250
1983	14,000	10,000	750		24,750
1984			750		750
1985			750		750
1986			750		750
1987			750		750
1988			750	$ 3,000	3,750
1989			750		750
1990			750		750
1991			750		750
1992			750		750
1993			750		750
1994			750	3,000	3,750
1995			750		750
1996			750		750
1997			750		750
1998			750		750
1999			750		750
2000			750		750
TOTAL	$ 28,000	$ 13,000	$ 13,750	$ 6,000	$ 60,750

Total Estimated Probable and Potential Gas Production 1983 - 2000 = 10,985 MMCF

Average Cost of Natural Gas - $5.53/MMBTU

TABLE NO. 8

COST PROJECTION
TO SUPPLY TOTAL ENERGY NEEDS OF BARROW & NARL WITH NATURAL GAS VIA PIPELINE FROM PRUDHOE BAY

(All amounts are in thousands)

Year	Capital Expenditures	Purchase Gas $1.00/MCF	Maintenance Oper. Costs	Total Annual Cost
1980	Planning			
1981		and Construction		
1982	$ 5,000			$ 5,000
1983	148,000			148,000
1984	200,000			200,000
1985	0	$ 1,186	$ 1,900	3,086
1986	0	1,214	1,900	3,114
1987	0	1,245	1,900	3,145
1988	0	1,275	1,900	3,175
1989	0	1,309	1,900	3,209
1990	0	1,340	1,900	3,240
1991	0	1,375	1,900	3,275
1992	0	1,409	1,900	3,309
1993	0	1,443	1,900	3,343
1994	0	1,430	1,900	3,330
1995	0	1,517	1,900	3,417
1996	0	1,556	1,900	3,456
1997	0	1,557	1,900	3,457
1998	0	1,639	1,900	3,539
1999	0	1,682	1,900	3,582
2000	0	1,728	1,900	3,628
TOTAL	$353,000	$22,905	$30,400	$406,305

AVERAGE COST OVER 16 YEARS - $17.67/MMBTU

TABLE NO. 9
COST PROJECTION TO SUPPLY FUEL OIL FOR ELECTRICAL GENERATION REQUIREMENTS FOR BARROW & NARL BARGED FROM LOWER 48

(All Amounts are in Thousands)

	Fuel Oil BBLS.	Price of Fuel & Barging @$32.75/BBL	Barrow Operating Expenses	Capital* Costs	Total Annual Costs
1980	Planning				
1981		and			
1982		Construction		$ 8,460	$ 8,460
1983	84.6	$ 2,771	$ 300		3,071
1984	86.9	2,846	300		3,146
1985	89.4	2,928	300		3,228
1986	91.9	3,010	300		3,310
1987	94.6	3,098	300		3,398
1988	97.5	3,193	300		3,493
1989	100.5	3,291	300		3,591
1990	103.2	3,380	300		3,680
1991	106.4	3,485	300		3,785
1992	109.4	3,583	300		3,883
1993	112.3	3,678	300		3,978
1994	115.5	3,783	300		4,083
1995	118.9	3,894	300		4,194
1996	122.3	4,005	300		4,305
1997	126.0	4,127	300		4,427
1998	129.8	4,251	300		4,551
1999	133.7	4,379	300		4,679
2000	138.0	4,520	300		4,820
TOTAL	1,960.9	$64,222	$5,400	$ 8,460	$ 78,082

18 YEAR AVERAGE COST - $7.11/MMBTU

*Capital Costs include bulk storage facilities.

TABLE NO. 9-A

FUEL OIL COSTS - FROM "LOWER 48"

(FOR ELECTRIC POWER GENERATION ONLY)

Price - Commercial quotation, Seattle - $0.39 /gal.

Transportation - Commercial quotation, Seattle - $0.39 /gal.

Storage Facilities at Barrow

Tankage - 276,000 @ $30/bbl -	$8,280,000
Offloading facilities	180,000
TOTAL FACILITY CAPITAL	$8,460,000

Operating and Maintenance Costs at Barrow

	Annual Cost
Operator - 1 @ $15/hr., 10 hr./day x 365	$ 54,750
Maintenance - 1 @ $15/hr., 8 hr./day x 250	30,000
Mechanic - 1 @ $20/hr., 8 hr./day x 125	20,000
	$104,750
Overhead @ 100 percent	104,750
TOTAL WAGES AND OVERHEAD	$209,500
Offload Fuel Oil @ 1¢/gallon	45,750
Fuel and Lubricants	27,000
Fuel shrinkage - 1/2 of 1 percent/year	17,800
TOTAL	$300,050

TABLE NO. 10
COST PROJECTION TO SUPPLY TOTAL ENERGY NEEDS FOR BARROW & NARL WITH FUEL OIL BARGED FROM LOWER 48

(All Amounts are in Thousands)

Year	Fuel Oil Reqmts. (Bbls.)	Price of Fuel & Barging @ $32.75/bbl	Barrow Operating Expenses	Capital Costs*	Total Annual Costs
1979					
1980	Planning				
1981	and				
1982		Construction		$24,500	$ 24,500
1983	202	$ 6,616	$ 1,110		7,726
1984	207	6,772	1,110		7,882
1985	212	6,943	1,110		8,053
1986	217	7,107	1,110		8,217
1987	222	7,271	1,110		8,381
1988	228	7,467	1,110	200	8,777
1989	234	7,664	1,110		8,774
1990	239	7,827	1,110		8,937
1991	246	8,057	1,110		9,167
1992	252	8,253	1,110		9,363
1993	257	8,417	1,110	200	9,727
1994	264	8,646	1,110		9,756
1995	271	8,875	1,110		9,985
1996	278	9,105	1,110		10,215
1997	285	9,334	1,110		10,444
1998	293	9,596	1,110	200	10,906
1999	300	9,825	1,110		10,935
2000	308	10,087	1,110		11,197
TOTAL	4,515	$147,862	$19,980	$25,100	$192,942

18 YEAR AVERAGE COST - $7.63/MMBTU

*Capital Costs include bulk storage, individual tanks, and all conversion costs to convert to fuel oil from natural gas.

TABLE NO. 10-A

FUEL OIL COSTS - FROM "LOWER 48" (FOR TOTAL REQUIREMENTS OF BARROW AND NARL)

Price - Commercial quotation, Seattle - $0.39 / gal.

Transportation - Commercial quotation, Seattle - $0.39 /gal.

Storage Facilities at Barrow

Tankage - 616,000 @ $30/bbl -	$18,480,000
Home and building conversion - (1160 x $5000)	5,800,000
Fuel oil delivery trucks (4)	220,000
TOTAL FACILITY CAPITAL	$24,500,000
Equipment replacement at 5 year intervals	$ 200,000

Operating and Maintenance Costs

	Annual Cost
Operators - 3 @ $15/hr., 8 hrs./day, 365 days	$ 131,400
Maintenance - 2 @ $15/hr., 8 hrs./day, 250	60,000
Mechanic - 1 @ $20/hr., 8 hrs./day, 250	40,000
Supervisor - 1 @ $25/hr., 8 hrs./day, 365	73,000
TOTAL WAGES	$ 304,400
Overhead @ 100%	304,400
TOTAL WAGES AND OVERHEAD	$ 608,800
Offload fuel oil @ 1¢/gallon, avg./year	105,340
Truck delivery to consumers (5.96 million gals. x 5¢)	298,000
Fuel and lubricants	57,000
Fuel shrinkage - 1/2 of 1 percent/year	41,000
TOTAL	$1,110,240

TABLE NO. 11

COST PROJECTION TO SUPPLY TOTAL ENERGY NEEDS OF BARROW & NARL WITH FUEL OIL FROM OIL WELLS NEAR UMIAT

(All amounts in thousands)

Year	Capital Expenditures	Drilling Workovers	Operating Costs	Pipeline Maintenance	Annual Costs
1980					
1981		Planning			
1982	$ 10,000		and		$ 10,000
1983	100,000			Construction	100,000
1984	132,000	$12,000			144,000
1985	0	2,000	$ 4,000	$ 1,600	7,600
1986	0	2,000	4,000	1,600	7,600
1987	0	2,000	4,000	1,600	7,600
1988	0	4,000	4,250	1,600	9,850
1989	0	2,000	4,250	1,600	7,850
1990	0	4,000	4,500	1,600	10,100
1991	0	2,000	4,500	1,600	8,100
1992	0	4,000	4,750	1,600	10,350
1993	0	2,000	4,750	1,600	8,350
1994	0	4,000	5,000	1,600	10,600
1995	0	2,000	5,000	1,600	8,600
1996	0	4,000	5,250	1,600	10,850
1997	0	2,000	5,250	1,600	8,850
1998	0	4,000	5,500	1,600	11,100
1999	0	2,000	5,500	1,600	9,100
2000	0	2,000	5,500	1,600	9,100
TOTALS	$242,000	$56,000	$76,000	$25,600	$399,600

AVERAGE COST OVER 16 YEARS - $17.39/MMBTU

TABLE NO. 12
COST PROJECTION TO STRIP-MINE COAL AT WAINWRIGHT, ALASKA

(All Amounts are in Thousands)

Year	Coal Reqmts. M Tons	Annual Operating Costs	Capital Costs	Total Annual Costs
1980				
1981		Planning and Construction Capital	$ 1,000	$ 1,000
1982			5,000	5,000
1983			4,000	4,000
1984			3,000	3,000
1985			3,306	3,306
1986	28.6	$ 2,926		2,926
1987	29.4	2,926		2,926
1988	30.3	2,926		2,926
1989	31.3	2,926		2,926
1990	32.1	2,926	(1)1,286	4,212
1991	33.1	3,394		3,394
1992	34.0	3,394		3,394
1993	34.9	3,394		3,394
1994	35.9	3,394		3,394
1995	37.0	3,394	(1)1,286	4,680
1996	38.1	3,870		3,870
1997	39.2	3,870		3,870
1998	40.4	3,870		3,870
1999	41.6	3,870		3,870
2000	42.9	3,870	(1)1,286	5,156
Total	528.8	$ 50,950	$ 20,164	$ 71,114

15 Year Average Cost - $134/Ton
$7.44/MMBTU

(1) Replace Equipment

TABLE NO. 13
COST PROJECTION TO BARGE WAINWRIGHT COAL TO BARROW TO GENERATE ELECTRICITY FOR LIGHT AND POWER

(All amounts are in thousands)

Year	Coal Reqmts. (Tons)	Mining Cost	Transportation and Storage	Barging Capital Cost	Coal Fired Plant Capital Cost	Total Annual Costs
1980						
1981		$[(1)] 1,000	Planning and Construction Capital		$ 1,000	$ 2,000
1982		5,000			15,000	20,000
1983		4,000		(2) 1,000	8,000	13,000
1984		3,000		3,000	3,000	9,000
1985		3,306		720	3,000	7,026
1986	28.6	2,926	$ 1,414			4,340
1987	29.4	2,926	1,414			4,340
1988	30.3	2,926	1,414			4,340
1989	31.3	2,926	1,414			4,340
1990	32.1	4,212	(3) 2,989			7,201
1991	33.1	3,394	1,626			5,020
1992	34.0	3,394	1,626			5,020
1993	34.9	3,394	1,626			5,020
1994	35.9	3,394	1,626			5,020
1995	37.0	4,680	(3) 3,201			7,881
1996	38.1	3,870	1,854			5,724
1997	39.2	3,870	1,854			5,724
1998	40.4	3,870	1,854			5,724
1999	41.6	3,870	1,854			5,724
2000	42.9	5,156	(3) 3,429			8,585
Total	528.8	$ 71,114	$ 29,195	$ 4,720	$ 30,000	$ 135,029

15 Year Average Cost - $255/Ton
$14.16/MMBTU

(1) Mine Capital
(2) Capital in barge facilities and equipment
(3) Replace equipment

TABLE NO. 14
COST PROJECTION TO TRUCK WAINWRIGHT COAL TO BARROW TO GENERATE ELECTRICITY FOR LIGHT AND POWER

(All amounts are in thousands)

Year	Coal Reqmts. (tons)	Mining Cost	Transportation and Storage	Trucking Capital Cost	Coal Fired Plant Capital Cost	Total Annual Costs
1980						
1981	Planning	$ 1,000			$ 1,000	$ 2,000
1982	and	5,000			15,000	20,000
1983	Construction	4,000		$ 1,000	8,000	13,000
1984	Capital	3,000		2,557	3,000	8,557
1985		3,306		2,000	3,000	8,306
1986	28.6	2,926	$ 2,165			5,091
1987	29.4	2,926	2,165			5,091
1988	30.3	2,926	2,165			5,091
1989	31.3	2,926	2,165			5,091
1990	32.1	4,212	(1)4,370			8,582
1991	33.1	3,394	2,490			5,884
1992	34.0	3,394	2,490			5,884
1993	34.9	3,394	2,490			5,884
1994	35.9	3,394	2,490			5,884
1995	37.0	4,680	(1)4,695			9,375
1996	38.1	3,870	2,839			6,709
1997	39.2	3,870	2,839			6,709
1998	40.4	3,870	2,839			6,709
1999	41.6	3,870	2,839			6,709
2000	42.9	5,156	(1)5,044			10,200
Total	528.8	$71,114	$44,085	$5,557	$30,000	$150,756

15 Year Average Cost - $285/Ton
$15.83/MMBTU

(1) Replace Equipment

TABLE NO. 15
COST PROJECTION TO GENERATE ELECTRICITY AT WAINWRIGHT MINE AND TRANSMIT TO BARROW FOR LIGHT AND POWER ONLY

(All Amounts are in Thousands)

Year	Energy Reqmts. MMBTU's	Mining Cost	Transmission Cost	Transmission Capital	Coal-Fired Plant Capital	Total Annual Cost
1980						
1981	Planning	$ 1,000		$ 3,000	$ 1,000	$ 5,000
1982		5,000		8,000	15,000	28,000
1983	and	4,000		9,000	8,000	21,000
1984		3,000		10,000	3,000	16,000
1985	Construction	3,306		6,685	3,000	12,991
1986	515	2,926	$ 1,651			4,577
1987	530	2,926	1,651			4,577
1988	546	2,926	1,651			4,577
1989	563	2,926	1,651			4,577
1990	578	4,212	1,651			5,863
1991	596	3,394	1,651			5,045
1992	613	3,394	1,651			5,045
1993	629	3,394	1,651			5,045
1994	647	3,394	1,651			5,045
1995	666	4,680	1,651			6,331
1996	685	3,870	1,651			5,521
1997	706	3,870	1,651			5,521
1998	727	3,870	1,651			5,521
1999	749	3,870	1,651			5,521
2000	773	5,156	1,651			6,807
TOTAL	9,523	$71 114	$24,765	$36,685	$30,000	$162,564

15 YEAR AVERAGE COST - $17.07/MMBTU

TABLE NO. 16

COST PROJECTION TO DELIVER "LOWER 48" COAL TO BARROW TO GENERATE ELECTRICITY FOR LIGHT AND POWER

(All Amounts are in Thousands)

Year	Coal Reqmts. (tons)	Price of Coal Delivered @$94/Ton	Capital Costs	Handling & Storage Expense	Coal-Fired Plant	Total Annual Cost
1980	Planning and		$ 500		$ 1,000	$ 1,500
1981		Construction	1,000		23,000	24,000
1982			1,538		6,000	7,538
1983	26.3	$ 2,472		$ 141		2,613
1984	27.0	2,538		141		2,679
1985	27.8	2,613		141		2,754
1986	28.6	2,688		141		2,829
1987	29.4	2,764		(1) 1,119		3,883
1988	30.3	2,848		141		2,989
1989	31.3	2,942		141		3,083
1990	32.1	3,017		141		3,158
1991	33.1	3,111		141		3,252
1992	34.0	3,196		(1) 1,119		4,315
1993	34.9	3,281		141		3,422
1994	35.9	3,375		141		3,516
1995	37.0	3,478		141		3,619
1996	38.1	3,581		141		3,722
1997	39.2	3,685		(1) 1,119		4,804
1998	40.4	3,798		141		3,939
1999	41.6	3,910		141		4,051
2000	42.9	4,033		141		4,174
	609.9	$57,330	$3,038	$5,472	$30,000	$95,840

18 YEAR AVERAGE COST - $157/Ton

- $7.14/MMBTU(2)

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(1) Replace equipment every five years.

(2) Based upon 11,000 BTU/lb. coal.

TABLE 17

GENERATING PLANT FUEL REQUIREMENTS

(All Electric Case - Light, Power and Electrical Heating)

	(a)FUEL REQUIREMENTS Billion BTU's			NATURAL GAS MMCF			(b)FUEL OIL M Barrels			(b)COAL M Tons		
	Barrow	NARL	Total	Barrow	NARL	Total	Barrow	NARL	Total	Barrow	NARL	Total
1980	2229	1156	3385	2229	1156	3385	211.0	109.4	320.4	53.6	27.8	81.4
1981	2320	1156	3476	2320	1156	3476	219.6	109.4	329.0	55.7	27.8	83.5
1982	2403	1156	3559	2403	1156	3559	227.5	109.4	336.9	57.8	27.8	85.6
1983	2465	1156	3621	2465	1156	3621	233.3	109.4	342.7	59.3	27.8	87.1
1984	2549	1156	3705	2549	1156	3705	241.3	109.4	350.7	61.2	27.8	89.0
1985	2635	1156	3791	2635	1156	3791	249.4	109.4	358.8	63.4	27.8	91.2
1986	2714	1156	3870	2714	1156	3870	256.9	109.4	366.3	65.2	27.8	93.0
1987	2807	1156	3963	2807	1156	3963	265.7	109.4	375.1	67.5	27.8	95.3
1988	2889	1156	4045	2889	1156	4045	273.5	109.4	382.9	69.4	27.8	97.2
1989	2989	1156	4145	2989	1156	4145	282.9	109.4	392.3	71.8	27.8	99.6
1990	3082	1156	4238	3082	1156	4238	291.7	109.4	401.1	74.1	27.8	101.9
1991	3178	1156	4334	3178	1156	4334	300.8	109.4	410.2	76.4	27.8	104.2
1992	3280	1156	4436	3280	1156	4436	310.5	109.4	419.9	78.8	27.8	106.6
1993	3406	1156	4562	3406	1156	4562	322.4	109.4	431.8	81.9	27.8	109.7
1994	3489	1156	4645	3489	1156	4645	330.2	109.4	439.6	83.9	27.8	111.7
1995	3599	1156	4755	3599	1156	4755	340.7	109.4	450.1	86.5	27.8	114.3
1996	3716	1156	4872	3716	1156	4872	351.8	109.4	461.2	89.3	27.8	117.1
1997	3828	1156	4984	3828	1156	4984	362.4	109.4	471.8	92.0	27.8	119.8
1998	3953	1156	5109	3953	1156	5109	374.2	109.4	483.6	95.0	27.8	122.8
1999	4072	1156	5229	4072	1156	5229	385.5	109.4	494.9	97.8	27.8	125.6
2000	4207	1156	5363	4207	1156	5363	398.2	109.4	507.6	101.2	27.8	129.0
	65810	24276	90087	65810	24276	90087	229.5	2297.4	8526.9	1581.8	583.8	2165.6

(a) Fuel requirements for electrical heating computed from natural gas usage, assuming gas space heating efficiency 70%, electrical space heating efficiency 95%, gas turbine generator efficiency 16%.

(b) Fuel required for steam power plant with assumed efficiency of 30%

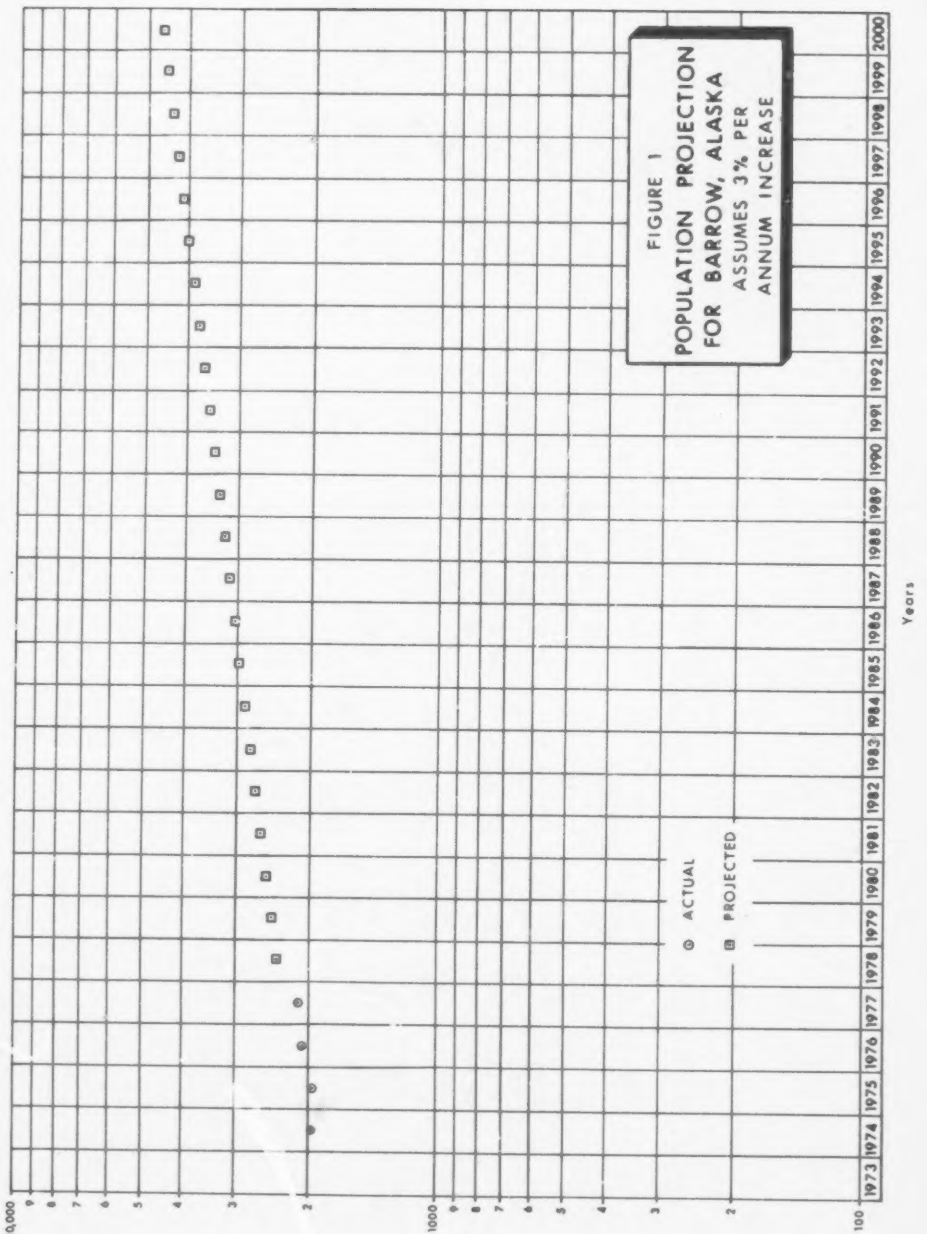

FIGURE 1
POPULATION PROJECTION FOR BARROW, ALASKA
ASSUMES 3% PER ANNUM INCREASE

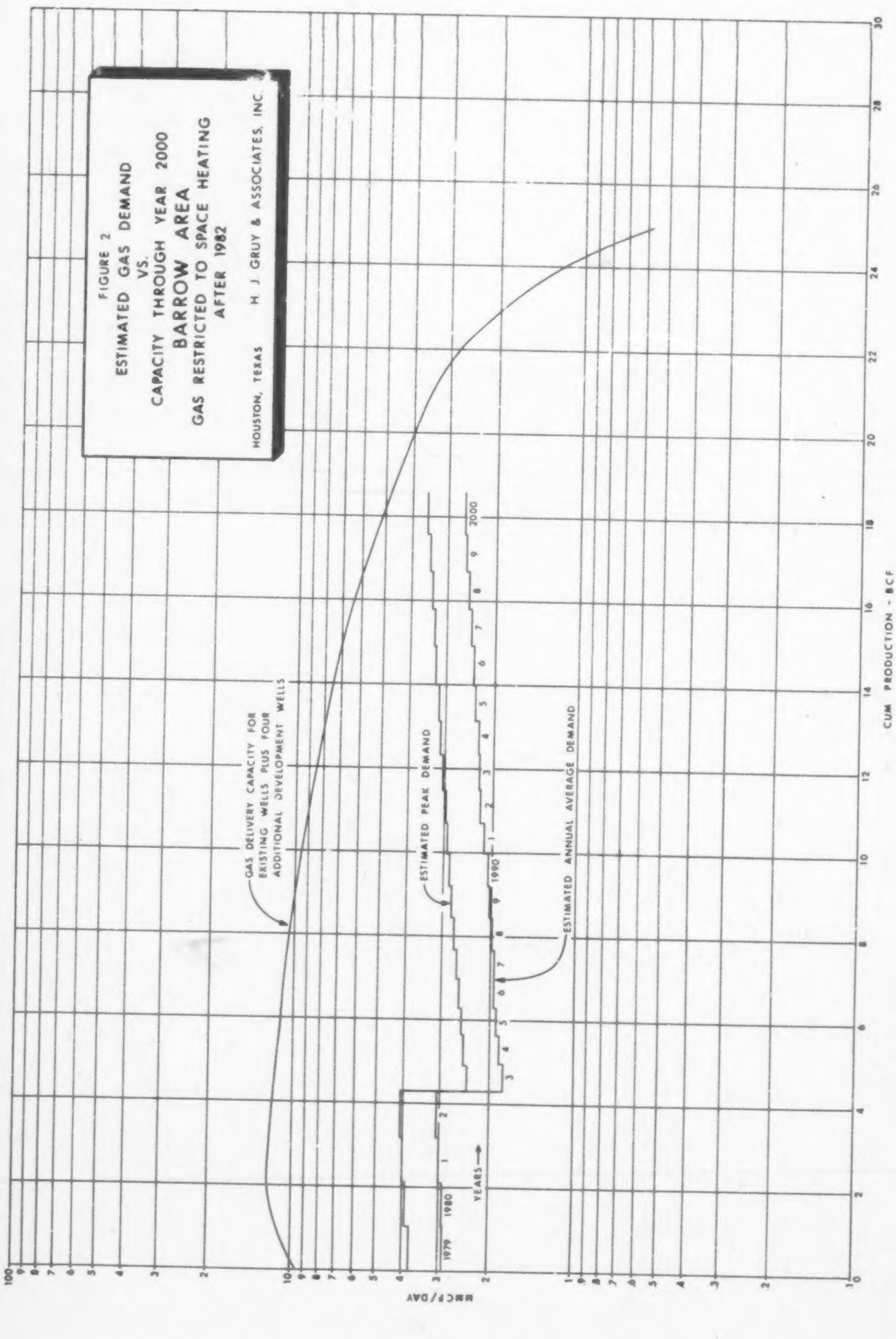

FIGURE 2
ESTIMATED GAS DEMAND
VS.
CAPACITY THROUGH YEAR 2000
BARROW AREA
GAS RESTRICTED TO SPACE HEATING
AFTER 1982

HOUSTON, TEXAS H. J. GRUY & ASSOCIATES, INC.

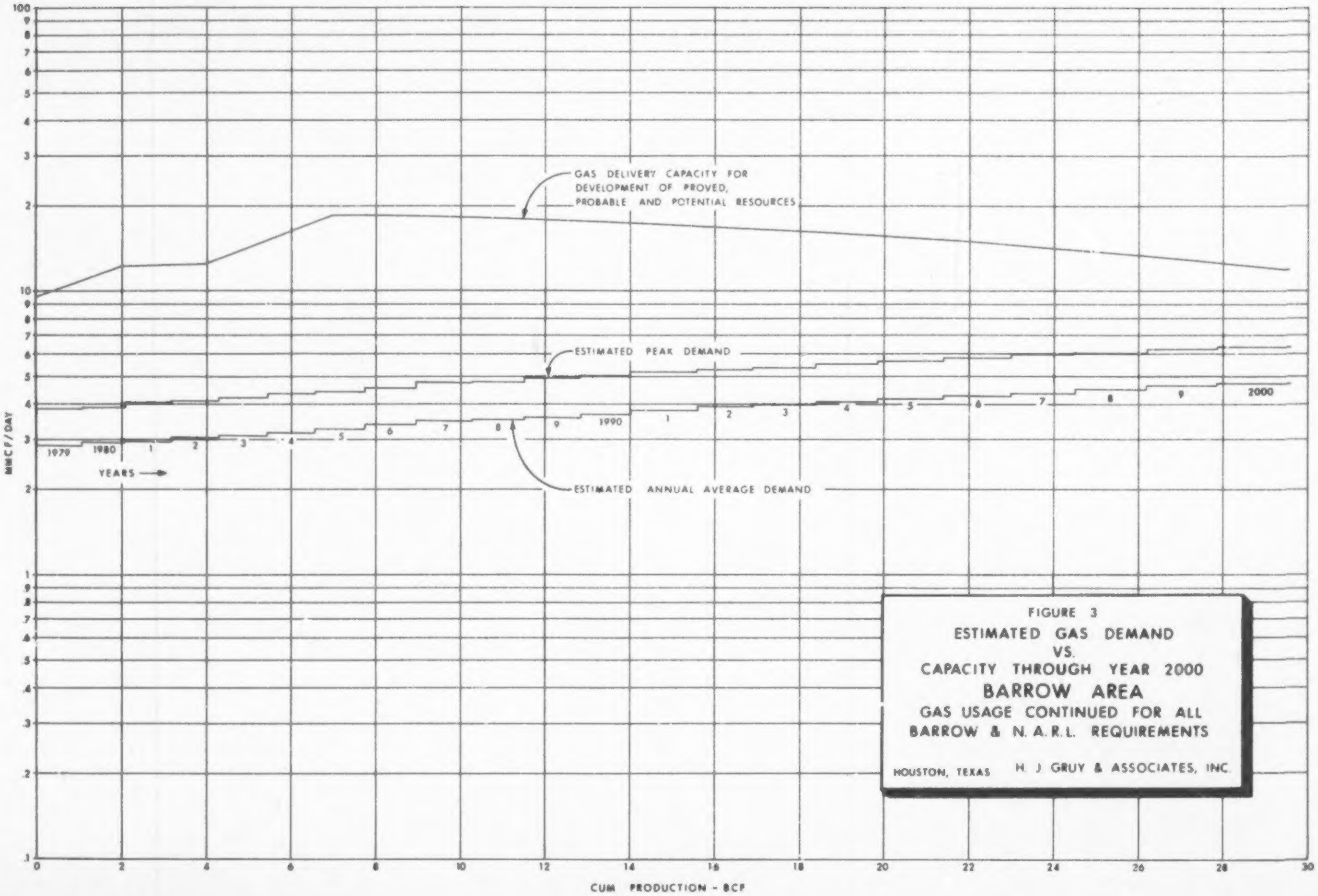

FIGURE 3
ESTIMATED GAS DEMAND
VS.
CAPACITY THROUGH YEAR 2000
BARROW AREA
GAS USAGE CONTINUED FOR ALL
BARROW & N. A. R. L. REQUIREMENTS

HOUSTON, TEXAS H. J. GRUY & ASSOCIATES, INC.

NATURAL GAS FROM SOUTH BARROW FIELDS

Costs to Operate and Develop Proved Reserves

(1) Operating Expenses

Current annual field operating expenses - approximately $1,000,000/yr. This figure would increase by $125,000 for each of the new wells added.

(2) Workover Costs

(a) as part of multiwell program	$1,500,000/well
(b) when full rig mobilization and logistical support is carried by the one well	$3,000,000/well

(3) Development Drilling Cost

(a) as part of multiwell program	$5,000,000/well
(b) if drilled individually and requiring each well to bear full rig mobilization and logistical support costs	$6,000,000/well

(4) Production Facilities Cost

Flowlines and separation equipment	$1,000,000/well

Costs to Operate and Develop Probable and Potential Reserves

(1) Drilling Cost

(a) To drill and complete exploratory well	
(as part of multiwell program)	$5,000,000/well
(as only well during year)	$6,000,000/well
(b) Drill and abandon dry hole	
(as part of multiwell program)	$4,000,000/well
(when only well drilled during year)	$5,000,000/well

(2) Production Facilities

(a) For the three wells to be drilled in East Barrow area during 1983	$3,000,000
(b) For the three wells to be drilled in potential area to the south during 1983	$10,000,000*

(3) Annual Operating Expenses

(a) For new wells in East Barrow area	$ 125,000/well
(b) For new wells in potential area to the south	250,000/well

(4) Workover Costs

Assumed 2 required maintenance workovers @ $3,000,000 each

* Includes cost of gravel all weather road.

GAS LINE FROM PRUDHOE BAY

Gas line from Prudhoe Bay to Barrow consisting of 8" Schedule 80 A333 Grade 6 line pipe (constructed above ground).

Route - Prudhoe Bay southwest across the Kuparuk River to the Colville River, then west to a point near the Topagoruk River about 25 miles south of the southern extent of Dease Inlet, then north to Barrow (+/- 240 miles). This route has five major river crossings and four minor crossings (Major: Kuparuk, Colville, Ikpikpuk, Meade and Inaru)

Cost Estimate:

Based on the estimate for the products line from Umiat to Barrow increased proportionately by the increased line length (20%). Where the costs are related to pipe weight (ie.: pipe haul) the costs are increased 50% which is that proportionate difference.

I.	Route Selection:	$ 192,000
II.	Survey:	
	A. Preliminary	480,000
	B. Final	630,000
III.	Engineering Design	180,000
IV.	Environmental Impact Study & Statement	900,000
V.	Materials:	
	A. Pipe (+/- 260 miles)	43,063,000
	B. Supports	6,426,000
	C. Saddles (55% incr. over Case I)	3,500,000
	D. River Bridges	
	(1) Colville	5,000,000
	(2) 4 major	9,400,000
	(3) 4 minor	400,000
	E. Compressor Booster (Prudhoe Bay)	520,000
VI.	Construction:	
	A. Site Preparation	8,655,000
	B. Pipe Haul (including supports) (Rolligon)	9,966,000
	C. Bridge Haul	3,564,000
	D. Welding	13,248,000
	E. X-Ray Inspections	3,600,000
	F. Bridges	
	(1) Colville	10,000,000
	(2) 4 major	28,200,000
	(3) 4 minor	1,200,000
	G. Pipe Placement	137,490,000
	H. Compressor Booster	1,548,000
	I. Communication & Safety Systems	2,400,000
	J. Testing	300,000

VII.	Camp Support:	1,704,000
VIII.	Logistics and Support:	4,399,000
IX.	Unclassified Costs:	29,697,000
(1)	GRAND TOTAL	$ 326,662,000
	Yearly Maintenance Costs:	$ 1,896,000

(1) Table No. 8 shows a "Grand Total" cost of $353 million. This results from increasing the "Unclassified Costs" from 10 percent to 19 percent.

PRODUCTS LINE FROM UMIAT

Products line from Umiat to Barrow consisting of 6" Schedule 80 A333 Grade 6 line pipe (constructed above ground).

Route - Umiat west parallel to the Colville River to Oumalik then north to Barrow (+/- 200 miles). This route has two major river crossings (Meade and Inaru) and four minor crossings.

Cost Estimate:

I.	Route Selection:	$ 160,000
II.	Survey:	
	A. Preliminary	400,000
	B. Final	525,000
III.	Engineering Design:	150,000
IV.	Environmental Impact Study & Statement:	750,000
V.	Materials:	
	A. Pipe (+/- 200 miles)	21,525,000
	B. Supports	5,355,000
	C. Saddles	2,250,000
	D. River Bridges	
	(1) 2 major crossings	4,700,000
	(2) 4 minor crossings	400,000
	E. Pump Station	430,000
VI.	Construction:	
	A. Site Preparation	4,900,000
	B. Pipe Haul (including supports) (Rolligon)	6,600,000
	C. Bridge Haul	1,600,000
	D. Welding	11,040,000
	E. X-Ray Inspections	3,000,000

	F. Bridges	
	(1) Major	14,100,000
	(2) Minor	1,200,000
	G. Pipe Placement	114,575,000
	H. Pump Station	1,290,000
	I. Communication & Safety Systems	2,000,000
	J. Testing	250,000
VII.	Camp Support:	1,420,000
VIII.	Logistics and Support:	3,666,000
IX.	Unclassified Costs: (10% of subtotal)	20,230,000
(1)	GRAND TOTAL	$ 222,516,000
	Yearly Maintenance Costs	$ 1,580,000

(1) Table No. 11 shows a "Grand Total" cost of $242 million. This results from increasing the "Unclassified Costs" from 10 percent to 20 percent.

COAL

Strip Mine, vicinity of Wainwright, Alaska

Mine Capital Cost

Equipment:	Crawler Tractor (4)	$ 708,000
	Motor Scraper	117,000
	Wheel Loader, 3 yd.	62,000
	Truck, diesel (20 ton)	112,000
	Scarifier, motor	100,500
	Fuel truck, 2000 gal.	22,000
	Pick-up (3)	30,000
	Transportation	134,500
	Total	$ 1,286,000
Facilities:	Office Building	150,000
	Maintenance Building	350,000
	Trailer Houses (5)	300,000
	Catering Building	100,000
	Power Plant (50 kw)	150,000
	Water supply, sewage	1,500,000
	Fuel tanks at mine	300,000
	Fuel tanks at Wainwright	100,000
	Total	$ 2,950,000

Support Facilities:	Air Strip	$ 3,000,000
	Gravel Road (8 miles)	5,100,000
	Total	$ 8,100,000
Site Development:		370,000
Engineering, Construction:		1,200,000
Environmental Impact Statement:		900,000
Contingencies:		1,500,000
Total Mine Capital:		$ 16,306,000

Mine Operating Costs

Operation and Maintenance:

Labor, Supervision	$ 1,400,000
Camp and Utility operation	700,000
Air Support	500,000
Insurance	326,000
Total Annual Cost (@30,000 tons/year)	$ 2,926,000

Transport by Barge, Wainwright to Barrow

Capital Facilities:

Coal storage facilities at Wainwright	$ 400,000
Dock facilities at Wainwright	300,000
Dragline	400,000
Haulage trucks (20 tons) (3)	337,500
Coal storage facilities at Barrow	600,000
Dock facilities at Barrow	300,000
Gravel road, Barrow (1 mile)	750,000
Dragline	400,000
Wheeled dozer	100,000
Haulage trucks (20 tons) (3)	337,500
Site development - Wainwright and Barrow	100,000
Engineering, Construction	200,000
Contingencies	495,000
Total Barge Facility Capital:	$ 4,720,000

Barge Operations (30,000 Tons/Yr.)

Trucking to Wainwright ($6/T)	180,000
Load, Barge to Barrow ($34/T)	1,020,000
Unload, stack at Barrow ($4/T)	120,000
Insurance	94,000
Total Annual Barging Cost (@30,000 tons/year)	$ 1,414,000

Truck Over Winter Road

Capital Facilities:

Storage Facilities at Mine	$ 400,000
Dragline (2)	800,000
Haulage trucks (20 tons) (10)	1,125,000
Pick-up trucks (2)	20,000
Grader	160,000
Midway station	300,000
Storage facilities at Barrow	600,000
Wheeled dozer	100,000
Site development	50,000
Winter road construction	1,300,000
Engineering, construction	265,000
Contingencies	437,000
Winter Road Facility Capital	$ 5,557,000

Winter Road Operations:

Annual road construction	$ 1,300,000
Haulage (10¢/ton/mile)	780,000
Insurance	85,000
Total Annual Trucking Cost (@30,000 tons/year)	$ 2,165,000

Generate electricity at Wainwright mine.

Transmit electricity to Barrow

Capital - Transmission System

Transmission Line (110 mi. x $40,000 x 6)	$26,400,000
Transforma Station (2) ($500,000 x 4)	4,000,000
Engineering & Construction	1,500,000
Contingencies	4,785,000
Transmission System Capital	$36,685,000

Operating and Maintenance Cost

Operating and Maintenance (2.5%/year)	$ 917,000
Insurance	734,000
Annual Cost	$ 1,651,000

NOTE: For comparison purposes, the capital cost of a 10,000 KW coal-fired plant is reflected in all coal cases, this totaling $30 million. No plant operating costs were included as these essentially cancel out in the comparison with other fuels. (See Table No. 13.)

COAL: Purchased from "Lower 48".

Coal price at Utah mine -	$ 24/Ton
Rail to Portland, Ore -	20/Ton
Load barge, port fee -	8/Ton
Barge to Barrow -	36/Ton
Off-load at Barrow -	6/Ton
Total	$ 94/Ton

Capital Costs, Barrow

Dock, road, storage facilities	$1,700,000
Equipment	978,000
Engineering and Construction	100,000
Contingencies	260,000
Barrow Facility Capital	$3,038,000

Operating and Maintenance Cost, Barrow

Haul to storage -	$1,080,000
Maintain storage -	1,400,000
Replace equipment -	2,932,000
Insurance	60,000
Operating Total	$5,472,000

Coal-fired Plant - 10 MW @ $3000/kW	$30,000,000

Assumptions and Criteria Used in Study of Alternative Fuels

1. Higher Heating Values Used in Calculations
   - a. Natural Gas: 1,000,000 Btu/MCF
   - b. Fuel Oil: 133,000 Btu/Gallon
     5.6 MMBtu/Bbl.
   - c. (1) Coal (Wainwright) 9,000 Btu/Lb.
     55.6 Tons/Billion Btu
   - (2) Coal ("Lower 48") 11,000 Btu/Lb.
     45.5 Tons/Billion Btu

2. Power Plant Efficiencies
   - a. Gas turbine generator (measured) - 22,185 Btu/kWh = 15.4 percent
   - b. Steam power plant (attainable) - 11,500 Btu/kWh = 29.7 percent

3. Space Heating Efficiencies (assumed)
   - a. Natural Gas: 70 percent
   - b. Electric: 95 percent

4. Conversion Factors
   - a. One kWh = 3413 Btu
   - b. Ratio of gas required for electrical space heating versus gas required for direct space heating:

$$0.70 \times \frac{1}{0.95} \times \frac{22,185 \text{ Btu/kWh}}{3413 \text{ Btu/kWh}} = \frac{4.79}{1}$$

5. Capital Costs ("Lower 48")
   - a. Gas Turbine Generator: $200/kW
   - b. Coal-fired Steam Power Plant $600/kW
   - c. Electric Transmission Line: $40,000/mile
   - d. Transformer Substation: $500,000

6. Cost Multiplier ("Lower 48" index = 1.0)
   - a. Gas Turbine Generator: 4.0
   - b. Steam Power Plant: 5.0

c. Electric Transmission Line: 6.0

d. Transformer Substation: 4.0

7. Fuel Price Used in Cost Comparisons

a. Natural Gas (Barrow Fields): 0

b. Natural Gas (Prudhoe Bay): 1.00/MCF

c. Diesel Fuel (Seattle): 39 cents/gallon

d. Diesel Fuel (Prudhoe Bay): 82 cents/gallon

e. Diesel Fuel (Umiat): 0

f. Coal (@ Utah mine): $24/ton

g. Coal (Wainwright): 0

DISCUSSION OF BARROW GAS WELL DELIVERY CAPACITIES

The wellhead delivery capacity of a gas well is determined by actual flow tests at different pressure drawdowns and is defined by the empirical equation:

$$Q = C(P_c^2 - P_w^2)^n$$

where:

Q = Delivery capacity in MCF/Day
C = Performance coefficient
P_c = Shut in wellhead pressure, psia
P_w = Flowing wellhead pressure, psia
n = Exponent (varies from .5 to 1.0)

This relationship is determined for each well by testing at four different rates of flow and plotting drawdown ($P_c^2 - P_w^2$) versus rate (Q) on logarithmic coordinates. The exponent (n) is the reciprocal of the mathematical slope of the resulting straight line log-log plot. The performance coefficient is the intercept of the line at a drawdown ($P_c^2 - P_w^2$) value of 1.

Based on the well tests conducted by Mr. Steve Lewis during the summer of 1978, the sustained pressure drawdowns in the Barrow field must be limited to about 10 percent. At drawdowns higher than about 10 percent the wells produce water and are subject to hydrate formation and freezing of lines. Also, the maximum flow rates must be restricted to about one million cubic feet per day for the permafrost dehydration system to function properly. Under current operations the wells flow up the casing-tubing annulus. As the gas flows up through the permafrost zone, cooling causes gas-water hydrates to form and fall to the bottom of the well. The water dropped out is periodically removed by purging with alcohol. This natural dehydration system has worked well in the past, but may have to be replaced by a glycol dehydration system if per well rates of flow in excess of one million cubic feet per day are necessary. Thus under present operating conditions, the peak delivery capacity of the seven wells currently producing is on the order of 4 to 5 million cubic feet per day. This capacity does not provide a sufficient margin of safety to meet peak demands.

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In Reply Refer To:
EGS-Mail Stop 106

FEB 1 1979

Memorandum

To: Assistant Secretary--Energy and Minerals

From: Assistant Director-Geologic Engineering

Subject: Study of Alternative Fuel Sources for Barrow, Alaska

The enclosed memorandum provides supplemental information on the Barrow gas issue not specifically treated in the Gruy report, already supplied to your office.

(Sgd) Henry W. Coulter

Henry W. Coulter

January 12, 1979

Memorandum

To : Director, U.S. Geological Survey

Through: Assistant Director, Geologic Engineering

From : Chief, ONPRA

Subject: Study of alternative fuel sources for Barrow, Alaska

The House Committee on Appropriations directed the Department of the Interior to study alternative fuel supplies and delivery systems for Barrow, Alaska. The responsibility for completing the study was assigned to the U.S. Geological Survey; the study, titled *A Study of Alternative Fuel Sources for Barrow, Alaska* is transmitted herewith. Although the study by Gruy Management Service Co. deals with the physical and financial problems of supplying alternate fuels to the communities at Barrow, there are some historical, environmental and cultural aspects that are not addressed in the study and must be considered as part of the decision process.

Historical background

The South Barrow gas field was discovered in 1949 by Barrow Test Well No. 2. The well was located near the old "Pet 4" Base Camp, since transferred to the Naval Arctic Research Laboratory, and also not far distant from the Native village of Barrow, Alaska. The Barrow No. 2 was completed as a producing well, and gas was piped to Base Camp as a more economic fuel for electricity generation and space heating than liquid fuel brought in by barge.

Federal Agencies constituted a growing presence in the village and in 1958, the various Federal Agencies and activities located in the community of Barrow also were converted to gas fuel. Soon after the natural gas was made available, sewage treatment plants and water supply systems were added for the Federal facilities. The Native people were quick to see the advantages enjoyed by Federal personnel, and their petition finally reached Congress for permission to purchase gas from the slowly developing South Barrow gas field in 1959. Congressional approval was granted in 1962, and the Secretary of the Navy was directed by Congress to sell surplus gas to the village of Barrow, Alaska (later Congressional directives concerned with supplying natural gas to the village of Barrow either by intent or oversight do not contain the word "surplus"). A "temporary" gas distribution system was constructed in 1964, and the village converted to natural gas as the primary energy source for electricity generation and space heating.

When the Department of the Interior, through the Geological Survey, took over from Navy the responsibility for gas field operations around Barrow on June 1, 1977, in accordance with the Naval Petroleum Reserves Production Act of 1976 (Public Law 94-258, U.S. 94th Congress, April 5, 1976), there were seven producing wells in the South Barrow gas field, and one shut-in gas well capable of significant production in the East Barrow gas field. Upon transfer, the Act charged the Department specifically to "Continue to develop and produce natural gas from the South Barrow gas field or other fields as may be necessary, to supply gas at reasonable and equitable rates to the Native village of Barrow and other communities and installations at or near Point Barrow, Alaska, and to installations of the United States located at or near Point Barrow, Alaska."

The producing capacity of the seven existing wells in the South Barrow field range widely, and two of the wells (Well No. 6 and Well No. 10) accounted for almost one-half of the total output of the field. An engineering report prepared for Navy shortly before the transfer to Interior indicated that the South Barrow field could meet the estimated demand into the 1980's. Thus, the Survey focused its attention on the East Barrow area where one producible gas well (Well No. 14) was shut in and one well (Well No. 12) had been drilled that produced at a rate so small that it was not considered "a keeper". It was not known whether the East Barrow area was a gas accumulation worth laying a pipeline to or not. Old seismic records were reexamined and the area appeared to be structurally high, but Well No. 12 (structurally higher than the producible well) was worrisome. Samples of the reservoir sand were sent out to be checked for swelling clays which were suspected to have reduced the permeability to near zero and restricted the flow of gas; the suspicions were confirmed by laboratory work.

The weak well could be explained, but firm information was still needed regarding the areal extent of the possible accumulation and the reservoir parameters in order to estimate the amount of gas that might be trapped in the East Barrow area. The kind of information that was needed could only be acquired by drilling wells. Locations for two wells were picked: one structurally low (Well No. 17) hopefully to penetrate the gas-water contact in order to more accurately determine the areal extent of the deposit; the other structurally high (Well No. 19) for better reservoir determinations. A third location was made on a separate structure located between the two gas areas and to the north. The northern location (Well No. 16) was picked and scheduled for drilling first because, if successful in finding gas, it would have been important in determining the route of a pipeline from the still (at that time) questionable East Barrow field.

The well located on the northern structure was a dry hole, but important information was obtained from it; the gas producing reservoir, called the Barrow gas sand, was not present to the north, having been removed by erosion.

The two locations picked in the East Barrow area accomplished their purposes admirably. The well in the lower structural position (Well No. 17) did indeed penetrate the gas-water contact, and the higher well (Well No. 19) provided additional information, but more importantly demonstrated that the reservoir was capable of producing gas near Well No. 12 if drilled and completed with the proper drilling fluid. Enough information now existed to make a preliminary calculation of the gas reserves contained in the East Barrow area. The recently completed engineering report indicates producible reserves, proved and probable, of about 19 billion cubic feet of gas.

Attention was originally focused on the East Barrow area because the area seemed to offer the quickest opportunity to add to the total gas reserves available for use by the Point Barrow communities. When Interior accepted responsibility for the Barrow operations in June 1977, a recent engineering report had calculated that the remaining producible gas reserves in the South Barrow gas field amounted to a little more than 15 billion cubic feet. Drilling additional close-in wells that would be more certain to produce would not have added to the reserves of gas. Such wells would have increased the rate at which the 15 billion cubic feet could be taken from the reservoir, but would not have added to the total amount of gas available. The course of action taken resulted in more than doubling the amount of gas estimated to be available to the area, now estimated to be about 33 billion cubic feet because one billion cubic feet has been produced since the earlier report was prepared. It also should be pointed out that additional drilling in the East Barrow area will likewise only increase the production rate, and probably not add appreciably to the total amount of gas available. Additional reserves of natural gas can only be added by drilling into deposits of gas that are as yet unknown, or by drilling relatively remote "stepout wells" that would significantly increase the areal extent of presently producing accumulations beyond the presently assumed boundaries.

With this point in mind, it seemed most logical to lay out a program of seismic exploration in order to obtain a clearer picture of the complex geologic structure in the Barrow area. Most of the existing seismic work in the Barrow area had been gathered in the 1940's as part of Navy's old "Pet 4" program. Great improvements have been made since that time in seismic exploration, both in data gathering and data processing. Additional well control had been added in the intervening years, and it was felt that by utilizing knowledge gained subsequent to the time of the original shooting, seismic lines could be located and a data gathering program designed that would yield optimum results. The results of that shooting are incorporated into the map of the Barrow region included in the report transmitted to you by this memorandum. As is indicated by that map, there are promising undrilled structures, as well as a relatively remote undrilled area, that appears to be part of the South Barrow gas field. Successful wells drilled in these areas would most likely significantly increase the total volume of gas available. A few tens of miles of seismic program are scheduled to be gathered and processed in late January or February of 1979 to increase the certainty of the structural interpretation and more clearly define the areas presently indicated to be favorable.

The original approach taken by the Geological Survey in undertaking the responsibility for gas operations in the Barrow area assumed a systematic development of sufficient productive capacity in the East Barrow area to allow shutting in some wells in the South Barrow field for remedial work. The oldest producing well in the South Barrow gas field (Well No. 5) was completed in June 1955, more than 23 years ago. The well experienced tubing problems and was worked over to remedy the problem in the spring of 1974. The next oldest well (Well No. 6) was completed in March 1964, and is currently considered to be in need of remedial work by the Field Operator, who has recently expressed some misgivings regarding the status of Well No. 7, just younger than Well No. 6. It is similarly reported that some of the surface equipment, especially on the older wells, is substandard and should be replaced. Geological Survey plans for the South Barrow field included working over and reequipping most of the old wells starting with the oldest and working toward the youngest. Following completion of the necessary remedial work, it was intended to drill three stepout wells south and west of the existing wells, an effort which could result in an upward revision of the producible gas reserves of the South Barrow field. The next step in the plan was to drill favorable seismic prospects in the area in an attempt to establish additional producible gas reserves. Those plans and the systematic approach to providing an assured source of gas to the Point Barrow, Alaska, area have been put aside in accordance with the instructions of the Congress.

The Geological Survey has been operating under the assumption that if gas operations in the Barrow area were continued much beyond the period allotted for the appraisal of the petroleum potential of the Reserve, some changes in the responsibility for the operations would probably be made. With that view in mind, the Survey has attempted to accumulate complete and factual records regarding the status of the existing gas fields, complete and accurate records of wells drilled and other work performed. The first thorough testing program in the South Barrow field was completed last summer (1978), under the guidance of reservoir engineers in order to ascertain more accurately the pressure decline and reservoir performance of this nearly 30-year-old gas field. An engineering report presenting the results of that testing program will be completed in the near future. An engineering study of the East Barrow area is in preliminary form at present, and the final report is being prepared. Those reports, along with other files reflecting additional studies performed, should be adequate to guide future operations.

Environmental considerations of alternative fuel sources

The projected growth of energy consumption in Barrow will result in an increase in air pollution even if there is no change to an alternate fuel system. The expansion of the Barrow gas fields and the continued supply of natural gas would have the least environmental impact. Although the conversion of the electric power generation and the heating of large governmental facilities with diesel would leave more natural gas available over a longer period for heating in the individual homes, this would result in some increases in air pollution and other environmental impacts.

The conversion from natural gas to diesel oil as a heating fuel in the individual homes will have three readily identified environmental impacts. There will be an increase in particulate pollution to the atmosphere, the amounts and type of which will depend on the source and character of the fuel oil. Secondly, a storage area will be required and the construction will have concomitant physical and esthetic environmental impacts. Thirdly, each time fuel oil is transferred from pipeline or barge and then further distributed to the individual homes, there is an increased possibility of an oil spill and potential environmental damage. Although this is potential degradation, it must be considered to be inevitable because of the human factor and the harsh climatic conditions.

If space heating in the individual homes is supplied by electricity and the electric power generators are fueled by oil or coal, the amount of air pollution is magnified even with the presently required pollution controls. The inefficiency of converting oil or coal to heat, to electricity, and again to heat would greatly increase the number of BTU's consumed to produce the same amount of heat in the individual homes.

The construction of a pipeline to provide natural gas from Prudhoe or oil from Umiat would have considerable impact on the terrain involved. Although the technical and environmental knowledge is available to build responsibly such a delivery system, it would require a massive engineering effort.

If coal is chosen as the alternate fuel source, there are the problems of obtaining sufficient water for boilers and stack scrubbers, air pollution and ash disposal. These are solvable problems but all have considerable environmental and economic impact. If the source of coal is on the North Slope, the environmental problems associated with operating a strip mine in a permafrost area are extreme and the unavoidable impacts must be recognized as a cost over and above those measured in dollars. There will be at least a thirty- to fifty-year period of environmental degradation, and some permanent alteration to the landscape. In addition, the 18-24-month stockpile of coal at Barrow, that will be necessary as insurance in case of transportation problems imposed by weather, will cause considerable physical and esthetic environmental impact on the flat, unbroken terrain of the North Slope. The environmental problems in the Barrow area could be reduced with the "mine mouth generation" concept, but the risk of interruption of power due to storms is very much increased. This risk must be given considerable weight if the entire community were to be dependent for heat upon a single delivery system.

Social and cultural considerations of alternative fuel sources

In the old Eskimo culture, fuel was restricted to driftwood, animal oils (blubber) and moss. It was never in plentiful supply and its continued provision was crucially central to everyday existence. Coal, oil shale, and crude oil seeps also were used when convenient. However, homes were very small because of the scarcity of building materials and, more importantly, of fuels. Thus, the source of heat, the cook stove and the oil lamp became the center of all indoor activities. Heat was not only centrally essential to existence, it was also the center of the family social life.

It is not clear when diesel oil was first used in the village of Barrow. Records indicate that it appeared sometime in the late 1930's or early 1940's and there was some limited heating with fuel oil before the beginnings of the Navy's Petroleum Exploration Program in 1944. Whereas, the village homes were heated by coal and driftwood, the Navy camp was totally fueled with diesel in its beginning years.

The provision of natural gas to the Navy camp, in 1949, emphasized the differences between the two communities, the Navy camp and the Native village, separated by only four miles along the beach. The exploration camp had large buildings, by northern standards, with adequate electricity and heat and was populated by non-Natives. The Native village had very small, overcrowded homes. with little or no electricity and limited heat. The subsistence culture was overwhelmed by the activities of this twentieth century project. This sharply defined a have/have not situation, and resulted in some social antagonisms. When the Federal agencies in Barrow village were converted to no-cost natural gas, they began to expand their heated space and lighting. This brought the have/have not, non-Native/Native situation in to the village itself. The village of Barrow petitioned Congress over a 15-year period for permission to purchase gas from the South Barrow gas field. Congressional approval was finally granted in 1962 and surplus natural gas became available in 1964 after another gas well was drilled.

The Barrow area suffered very heavy damages to some homes during a storm of unprecedented severity in the fall of 1963. Thus, concurrent with the availability of natural gas, there was a building boom, partially financed by low-interest Federal disaster money. Many homes were enlarged and improved and new homes were constructed with minimum electrical service and wall insulation. Although these homes were below standards of other areas in the country, they represented a major improvement in Barrow housing.

Barrow grew in population because of the increased Federal services, new schools and a hospital; and also more homes were built to relieve the overcrowding. In the past it was not uncommon for 12 or 14 people to live in a one-room home because of the high cost of warm space. With "cheap" fuel, families expanded the size of their homes, and parents and young adults could live separately. Although the total population increase during the late 1960's and the 1970's was not startling, the increase in heated space was dramatic. The increased number of family units and new affluence meant an increased number of appliances and conveniences, all consuming energy. These homes are all designed and built to take advantage of the efficiency of natural gas for heat, hot water, cooking and clothes drying.

This period coincided with increased Native culture consciousness and the battle for Native rights, culminating with the Alaska Native Claims Settlement Act of 1971. Improved housing was and still is a primary objective, and the new Native corporations, as well as the North Slope Borough Government, have given this program a high priority. Thus, the low-cost fuel at Barrow represents to other villages a basic necessary change from the old way of life, and an essential for the new amenities and equalities fought for in the ANCSA.

The proximity of a gas field to Barrow, and thus the availability of gas at low cost, has been accepted by the other villages as a fortunate circumstance of geography. However, should a source of energy, other than natural gas from a nearby field, be transported to Barrow, it would be difficult not to extend the same privileges to other Native villages, as the low price would no longer be due to a favorable happenstance of nature. For instance, if fuel oil or coal were barged into Barrow from some outside source and made available at an artificially low price, the same action can be equally justified for any other Native or non-Native village. Imagine the consternation of the villagers of Wainwright watching their nearby coal being mined and shipped to Barrow while they burn expensive diesel fuel. Or further, if a mine-mouth generator at one of the North Slope coal fields were chosen to be the solution, it could be argued that electrical transmission lines would have to be built to all villages so that all would have the same opportunity to equally share in what they consider to be their resources, whether located within the National Petroleum Reserve or outside its boundaries.

An alternate fuel source at Barrow is not a simple economic and environmental decision, as the socio-cultural ramifications could very easily enlarge the problem, both politically and geographically.

George Gryc

George Gryc
Chief
ONPRA

INCREASED STORAGE COST

Mr. GRYC. You would have to provide tankage for the storage of diesel. There are signficant increased costs.

Senator McCLURE. When you say it is inexpensive?

Mr. GRYC. Comparatively.

Senator McCLURE. Compared to what?

Mr. GRYC. Compared to coal.

Senator McCLURE. Compared to something else, but very high cost indeed.

Mr. FREDERICK. Yes; compared to prices elsewhere in the country, it is indeed expensive. We would be happy to provide for the record and to you the analysis that has been completed so far, and we will specifically look at some of the additional alternatives.

[The information follows:]

LNG ALTERNATIVE

A report titled "A Study of Alternative Fuel Sources for Barrow, Ala.," prepared by Gruy Management Service Co. under contract to the U.S. Geological Survey, has been provided to the committee. The report, prepared in 1979, did not consider LNG as an alternative fuel source. A quick estimate of LNG as an alternative fuel indicates that conversion of the Barrow/Browerville community and the Federal installations at or near Point Barrow, Ala., to LNG would require construction of gas storage facilities and a blending plant at Barrow. Because no LNG barge currently exists, a barge would need to be constructed. The estimated cost of building the storage facilities, blending plant, and barge is $7 to $10 million. Due to the required construction, the area could not be converted to LNG until fiscal year 1983 or fiscal year 1984. The current cost of LNG at Kenai peninsula, the nearest source, is $6 per million cubic feet. The annual cost of the tug to take the barge up to Barrow and back to Kenai is $1 million.

COMPLETION OF MINERAL SURVEYS

Senator McCLURE. Your justification indicates that under current funding and staffing levels, you can complete all four wilderness mineral surveys by January 1, 1984. What would it take in terms of dollar and manpower resources to accelerate this survey activity?

Mr. FREDERICK. I expect that we probably will have to look at that in somewhat more detail and provide that for the record.

Senator McCLURE. That would be fine if you would.

Dr. PECK. We're going flat out to meet that deadline, particularly with the addition of some of the special areas added during the last Congress. I don't think that we can decrease that time materially by additions of funds or staffing.

Senator McCLURE. My concern is, as it always has been, what level of information we get from the kinds of surveys that you are doing. There is a feeling on the part of many people who are unfamiliar with either public lands or minerals values that now that we have the report, we know what is there.

Dr. PECK. We do the best we can with available funds and materials, and we map the geology and conduct geochemical surveys and geophysical surveys and produce an aeromagnetic map, but without more detailed studies and drilling and detailed sampling, we cannot pretend to have discovered all of the ore deposits. That need has to be met in some other way as, for example, keeping the areas open for mineral exploration by private industry.

Senator McClure. That, of course, is my concern, that Congress is not mislead into believing that once a mineral survey is done, that we have any idea what the mineral resource is in terms of economic value to our country.

Mr. Frederick. I think that is reasonable, Senator. We hope to be able to provide intelligent information for at least the initial decision-making. I think there is always a chance that you will miss some mineral deposits.

Senator McClure. And even if you don't miss the mineral deposit, about all you really identify is the presence of some mineralization or geological anomaly that indicates the likelihood of the presence of a mineral deposit.

Mr. Frederick. That's correct.

Senator McClure. In terms of whether or not it would support a commercial activity for the recovery of a mineral, it is almost totally inadequate to meet that test, is it not?

Dr. Peck. Detailed exploration and development.

Senator McClure. It just says, "There is something here that might deserve a better look" or that "we think there is nothing here that deserves a better look."

Mr. Frederick. That's correct.

Senator McClure. Even then, there is wide disagreement among geologists, is there not?

Dr. Peck. On all subjects. [Laughter.]

Senator McClure. I remember—and I've used this example so often, maybe you have heard it before, and forgive me—the Lucky Friday Mine in north Idaho had been mined out and abandoned for nearly 40 years. Geologists had looked at it and said, "There is nothing there; it is done," but one fellow persisted and finally got them to look a little deeper, and discovered the richest mining ore deposit in the Coeur d'Alene district. That is after several generations of geologists with the best of industry expertise, had looked at it and said, "Do not waste any more money." If they can do that in a mine which was an operating mine, how good is our information with respect to the kinds of surveys that are made in the wilderness surveys?

I wish the record could reflect the eloquent shrug. [Laughter.]

Mr. Frederick. On that particular question with regard to the Forest Service wilderness, we are doing everything we can to provide as much information as early as it is available to the Forest Service. We are sitting down with them; we are providing information, interim information, and that sort of thing. The same with the BLM. We are also working hard on the techniques to provide us a better capability for those analyses.

WILDERNESS STUDY AREAS

Senator McClure. Believe me, I am not critical of the USGS on the level of those surveys. Those are the tools you have been given. It does have some value to us. I do not want to overstate that value and what is known by it.

You are now beginning to undertake the same kind of surveys on Bureau of Land Management wilderness study areas. What is your timeframe for completing those surveys?

Mr. Frederick. At the moment, 1987. We again—that program is about as tight as Dr. Peck described the Forest Service program to be, and we are working very closely with the Bureau of Land Management.

Senator McClure. Could I get the same response with respect to added dollars or personnel? Could you accelerate it?

Dr. Peck. I do not think we can accelerate materially. For one thing, a lot of the people that will be carrying out that study are now carrying out the study of Forest Service wilderness lands. And until that program is over in the summer of 1983, we cannot redirect those people into the BLM wilderness project.

Senator McClure. If you had more money, you could add more people. If you had more money or more personnel ceilings, then you could start on the BLM surveys sooner?

Dr. Peck. Yes; some acceleration could be obtained.

Mr. Frederick. Senator McClure, we are already starting on the BLM wilderness program this year. We will accelerate next year and accelerate a bit further in the following years. It would take some time, I believe, as Dr. Peck said, to really accelerate that program to get trained people on board.

We're doing with BLM the same thing as we did with the Forest Service. We are sitting down with them, looking at the schedules. We are providing as much advanced information as we can on what we know about mineral potential in some of their wilderness areas. They may indeed take a hard look at areas that they have just described as suitable, based on information that we provided and additional that is available to them.

OCS EVALUATION

Senator McClure. You mentioned in your comments earlier about shifting from a presale to a postsale evaluation on OCS. When you say postsale, you mean postadvertising and calling for bids, but before the sale has actually been made?

Mr. Frederick. Actually after the bid but before the final sale.

Senator McClure. So postsale doesn't really mean the actual sale?

Mr. Frederick. After the bids are in and before the actual sale is consummated, and we hope to be able to streamline that process so that it does not take a long time. We are shooting for a maximum of 90 days—on any tract—between the time that we get the bid and when the actual sale is consummated.

Senator McCLURE. It is fair to say that you put a tremendous importance on the national magnetic anomaly map, do you not?

Mr. FREDERICK. Yes, sir.

Senator McCLURE. What kind of a tool is that?

Dr. PECK. It is a very valuable tool for mineral exploration and for understanding the geology of an area. Most of the major nations of the world have already quite adequate aeromagnetic maps. In the United States needs have been met at least in part by private industry, but we feel the maps are extremely useful. It would be useful to have a complete map, and we have been using studies carried out for a variety of programs to help meet that need.

There is a lot of interest by private industry and academic people in the completion of that project.

Senator McCLURE. Do you have full access to the private efforts?

Dr. PECK. We are working in cooperation with the Society of Exploration Geophysicists to obtain data where needed.

Senator McCLURE. They invest an awful lot of money. What they get out of it is proprietary information, generally speaking. I wonder how much they share.

Dr. PECK. Through a cooperative program with the Geological Society of America and the Society of Exploration Geophysicists, we are working toward this map, and a lot of the people in those societies are with private industry. It is through that mechanism that we are trying to get proprietary data from private industry as well as data we generate ourselves.

Senator McCLURE. How successful? You say you try. I just wonder how well you are doing.

Dr. PECK. We have gotten quite a lot of data from private industry.

Senator McCLURE. I have heard a great many of the industry people indicate that they have a very high priority on the kind of information that comes from that kind of mapping. And as you noted, most other countries in the world have such a map already. If it is that good a tool and that important, why don't we have it already?

Dr. PECK. It has not risen in priority in previous administrations.

Senator McCLURE. I understand that. But why hasn't it risen in priority in previous administrations?

Dr. PECK. I don't know all of the reasons.

Senator McCLURE. Is it because you do not think it is worth that much?

Dr. PECK. No; it is a valuable tool.

Senator McCLURE. Is it because you have not been able to convince OMB?

Dr. PECK. We have not been able to convince the Department and the Office of Management and Budget previously of the utility of the map.

Senator McCLURE. Is that a fair answer?

Mr. FREDERICK. Yes, that is a fair answer. There has been less emphasis on mineral programs in general in the last few years.

Senator McClure. You can always get it from Zaire or the Soviet Union.

Mr. Frederick. This is a general-purpose kind of a tool, and when you get down to deciding where the money will actually go, then the tendency is to put it on the most urgent need right at the moment.

Senator McClure. Will you complete this map during fiscal year 1982?

Dr. Peck. No; under the revised budget, the completion date is 1985 with publication in 1986.

OSBORNE FAULT STUDY

Senator McClure. How far along is the USGS study of the Osborne fault mandated in the fiscal year 1981 appropriation bill?

Dr. Peck. We worked this out with Dean Miller and Professor Reed at the University of Idaho. We have a cooperative program where Professor Reed and many of his students will be working with it this summer, and there will be several projects in-house. Professor Reed's study is primarily aimed at mapping the fault traces, using both aerial photographs and LANDSAT imagery. Other studies will be isotopic and geochemical studies aimed at understanding the origin of the ore deposits so we can develop better techniques for finding hidden deposits.

Senator McClure. This is already included in the budget request?

Dr. Peck. Yes.

Mr. Frederick. Yes, sir.

Senator McClure. Under the mineral discovery loan program, how many contracts are remaining that require monitoring by USGS?

Dr. Peck. The Geological Survey still monitors 30 loans under the mineral discovery loan program, the last of which will expire in 1989.

RISE IN MINERAL PRICES

Senator McClure. Although no funds have been available for this program since 1974, has the rise in mineral prices over the past few years spawned an interest in the program?

Mr. Frederick. It is fair to say that, yes, it has.

Dr. Peck. Yes, sir; and I think it was quite a successful program.

Senator McClure. Would we be wise to fund it again?

Dr. Peck. I think so.

Senator McClure. How much would it take?

Mr. Frederick. That would require some analysis.

Senator McClure. Would you provide that for the record?

[The information follows:]

Mineral Discovery Loan Program

The funding level for a revitalized mineral loan program largely depends on the goals of the program and constraints placed upon it. From 1951 to 1958, the Geological Survey administered a very successful minerals exploration program under the Defense Minerals Exploration Act (DMEA) at a cost of about $10 million per year (in 1981 dollars). Subsequently, the Geological Survey granted mineral loans under DMEA's successor, the Office of Minerals Exploration (OME) from 1965 to 1974. The OME loans had a number of stipulations attached to them that tended to favor the small miner. The OME loan program provided about $2 million per year (in 1981 dollars) during the years loans were being granted. Administrative cost for these loans was in the range of 10 percent per year of the total amount of loans outstanding.

GEOTHERMAL PROGRAM

Senator McCLURE. Why is USGS reducing its geothermal investigation activities in the Cascades and northern great basin areas?

Dr. PECK. Because of the competition for funds in the budget. The geothermal program has been cut significantly in the last several years. This has forced us to extend the studies.

Senator McCLURE. Is it lack of interest on the part of industry or a feeling on your part or others that industry is going to do what you did not do?

Dr. PECK. It was a lack of budget support for the program as a whole. We have been able to complement our geothermal funds for study of the Cascades through our volcano program. In fact, there was activity under the geothermal program in the Cascades that first identified the earthquakes preceding the Mount St. Helens eruption. Those are complementary programs. We are still carrying out a sizable effort in the Cascades in the geothermal area.

Senator McCLURE. I wonder if you would supplement that for the record, indicating just what activities will be reduced and what will not and the rationale or justification for your decisions in this regard.

[The information follows:]

GEOTHERMAL PROGRAM

By analogy with other young volcanic regions elsewhere in the world with known geothermal resources, the Cascades Range, which covers a very large geographical area extending entirely through the States of Washington and Oregon and well into northern California, must be inferred to contain as yet undiscovered, major sources of geothermal energy, even though it contains few surface manifestations, such as hot springs and steam vents. Additional indication of this possibility of undiscovered, hidden resources lies in the high level of industry interest in results from Federal and State research projects, as evidences by attendance of many industry representatives at the two conferences on the geothermal potential of the Cascades in February 1980 and May 1981. The Survey must, therefore, maintain a significant program of geothermal investigations in this region, particularly because of the lack of surface manifestations has resulted in the region being poorly explored and considered a relatively high risk by industry.

BASIC RESEARCH PROGRAM

Senator McCLURE. On page 135 of your justification, you are asking for $900,000 to initiate a basic research program on the geologic evolution of the Atlantic margin. Why is that program necessary?

Mr. FREDERICK. That was dropped from the budget as part of the negative amendment. We had hoped to develop a better understanding of the evolution of that area to give us a better idea of the resources and the hazards that perhaps had been generated.

ADDITIONAL COMMITTEE QUESTIONS

Senator McClure. That bell tells me I have got to go start that series of votes on the floor. We will submit a series of questions for response in writing for the record, and we would appreciate your response to those questions promptly so that we can consider the information.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

National Mapping, Geography and Surveys

Question. Your fiscal 1982 request for National Mapping, Geography, and Surveys amount to some $76.6 million, which is an increase of some $6 million over the 1981 appropriations to date. As in the past, over 50 percent of this total account--or $39.9 million--is for new quadrangle mapping. Considering the expense of some $400 per square mile for this new mapping, is it truly necessary to perform detailed quadrangle mapping for every square mile of this country? If so, why?

Answer. Yes, our coordination procedures with Federal and State agencies has evidenced an urgent requirement for complete national coverage of primary quadrangle mapping. Topographic maps are fundamental tools for geologic mapping and other resource surveys as well as ground-water and surface water studies, industrial and area development, and engineering work. Federal agencies involved in land management activities look toward the Geological Survey for mapping support. These agencies include Bureau of Land Management for mineral assessment, leasing, and land transfer; Geological Survey for geologic mapping and hydrologic studies; Soil Conservation Service in planning and installing soil and water conservation measures; and National Park Service, Forest Service, Fish and Wildlife Service, and other agencies involved with environmental and ecological assessment, preservation, and enhancement. USGS maps are the base for Census studies, aeronautical charts of domestic areas and many special map products. The Department of Defense does little domestic mapping, but relies on the Geological Survey's primary quadrangle maps. There are many more examples possible of identified need for accurate, detailed quadrangle maps.

There have been several studies and many testimonials on the value of new quadrangle mapping. In brief, the financial benefits far exceed the cost of mapping even in remote areas.

The value of maps lies in their usefulness at a time of immediate need. As in the case of Mt. St. Helens, mapping had been done in this area and therefore greatly facilitated studies. Had there been no mapping accomplished in this area, assessment efforts would have been hampered tremendously. Detailed mapping must be accomplished even in areas where there may not be a readily apparent or immediate need, but for which a need may well arise possibly in a time of crisis or other noteworthy event.

Question. Last year, I believe your justification indicated this same mapping activity cost about $350 per square mile. Why has it increased some $50 per square mile in just one year?

Answer. Annual production costs are increasing about 10 to 15 percent a year. The increase from $350 to $400 follows that pattern and is due to rising costs of labor (+9 percent), paper (+20 percent), aerial photography (+40 percent), and other factors.

Question. How long have you been working on this particular series of new 7.5-minute and 15-minute topographic quadrangle maps? What has the rationale been as to which States or parts of

States are mapped first, second, third, etc.? Looking at the map on page 35 of your justification, I notice that the eastern States are generally further along in their mapping than the west. Is this just a function of starting in the east and moving west or is there a particular reason for this?

Answer. The Geological Survey began some limited larger-scale mapping in the 1920's but it was not until about 1945 that the use of aerial photography and the development of modern photogrammetric techniques allowed the GS to begin an efficient 7.5-minute nationwide mapping program.

The history of mapping in our country has been one of first attention in the east following the patterns of population concentrations and related industrial development. Many of the eastern States were the first to enter into joint funding agreements with USGS to expedite the 7.5-minute mapping programs in their States to encourage industrial growth.

Priority selections in other than joint funding areas are determined primarily by an annual national canvass of Federal agencies. This canvass is done in accordance with, and by the authority of, OMB Circular A-16. Federal priorities are merged with those from State Map Advisory Committees, national goals and other factors. This process results in an equitable distribution of mapping projects in response to national requirements.

Question. On page 37 of your justification, you mention that an automated system is being designed under contract to improve the map storage and distribution system and to minimize the effort required to fill map orders. Why is this activity being contracted? Don't you have the type of expertise to perform such a task within your own shop?

Answer. Large system development efforts, such as the automated system being developed for map distribution, require large staffs of experienced analysts and programmers. The National Mapping Division currently does not have such a staff available that can be devoted full-time to this effort and complete it within a reasonable time. Since this type of development is relatively short term, contracting is a more feasible and economical approach to achieving the desired goal than to build up a staff to perform the work in-house and then release the staff when the project is complete. NC&GIS's technical staff is too small to perform the task itself but is sufficient and competent to direct this project through a contractor. In addition, the contract firm working on this project has had prior experience in developing similar systems for major corporations in the private sector and is expected to deliver a highly useful system.

Question. You plan to revise approximately 1700 quadrangle maps in FY 1982, which is the same as FY 1980 and 1981. This leaves a continued backlog of about 7000 maps in need of revision. Does such a backlog cause any serious problems? In your opinion, is it more important to finish new mapping before concentrating on revision, or is this "double-track" approach the better solution? Why?

Answer. The 7000 map backlog of maps in need of revision is a serious concern; the map user will not have current data upon which to make critical decisions. We believe the "double-track" approach is correct, that is to proceed with both new mapping and revision at levels that will be as responsive as possible to national need with limited funds. We are giving special emphasis to revision of maps in areas of high national interest such as coal areas, the coastal zone, and standard metropolitan statistical areas. Since the new mapping effort continually adds to the number of maps subject to revision, future revision activities will need to be increased.

Question. Of the 1,700 maps to be revised in fiscal year 1982, how many are partial revisions and how many are complete revisions? For the record, please supply this same information for 1980 and 1981. Why does a complete revision cost the same $400 per square mile as the new map? It would certainly seem that revising a map--even a complete revision--would be an easier and less costly procedure than developing entirely new maps. Is this an incorrect assumption?

Answer. Many of our older maps (25 years and older) were prepared using methods appropriate to then existing technology but which now result in some of the printed maps not meeting modern map accuracy requirements. We are replacing these older maps which require new field control, aerial photography, and photogrammetric processing in essentially the same magnitude required to produce a new map.

The revision program consists of the following for FY 1980 through FY 1982.

	FY 1980 (Actual)	FY 1981 (Est)	FY 1982 (Est)
Partial Revision	1,315	1,660	1,660
Complete Revision (or remapping)	35	40	40

Question. A number of maps you develop, including the orthophotoquads, are provided in response to specific needs of other State and Federal agencies. Do these agencies or divisions of government compensate GS in any way for the work you perform? If so, please provide for the record a complete list of revenues received from each agency for each activity performed by GS.

Answer. Revenues are received each fiscal year from State and Federal agencies for preparation of various maps, digital data, and cartographic products. This includes support for the National High Altitude Photography program (NHAP). FY-1980 revenues from principal agencies are as follows:

FY-1980 Revenues	Principal State & Federal Agency
$3,083,320	States, Counties, and Municipalities - State and local funds matched by Federal funds to primarily expedite primary quadrangle mapping operations in areas of mutual interest in 37 States with the

	National Mapping Division. These funds also support needs of some States for map revision, orthophotoquads, and intermediate scale mapping.
76,102	Bureau of Indian Affairs - Production of orthophotoquads and orthophoto mosaics of various Indian reservations and reformatting and updating of existing USGS Topo maps for Indian Reservation environmental assessments. NHAP support.
576,338	U.S. Fish and Wildlife Service - Preparation of various cartographic products in support of the National Wetlands Inventory Program. NHAP support.
725,588	Bureau of Land Management - Preparation of orthophotoquad, and other special mapping products to meet BLM program requirements for surface management and minerals management of the Federal Lands. NHAP support.
95,017	Office of Surface Mining, & Enforcement - In support of the National High Altitude Photography program.
3,075,396	Department of Agriculture - Production of orthophotoquads and intermediate scale planimetric maps of selected areas of interest for the Forest Service and Soil Conservation Service. NHAP support.
267,741	Department of Defense - Preparation of small-scale and special map products in support of DMA civilian and military requirements. Special mapping is provided to support Corps of Engineers requirements. NHAP support.
64,509	Department of Energy - Provide the necessary digitizing and processing in order to produce digitized cartographic data from 1:500,000-scale State Base Maps and establish precise horizontal and vertical control in selected areas of the U.S.
58,384	National Aeronautics and Space Administration - Digital data production of selected areas of the U.S.
208,273	National Science Foundation - Topographic surveys and mapping in Antarctica.
100,018	Bureau of Mines - In support of the National High-Altitude Photography Program.

31,280	Tennessee Valley Authority - In support of the National High-Altitude Photography Program and digital data to support their requirements to comply with the National Clean Air Act.
76,329	Ozark Regional Commission - In support of Technical Assistance relative to Land Resources Management.
10,000	National Park Service - In support of the National High-Altitude Photography Program.

Question. Explain for the committee please, how the Airborne Profiling System you are developing works, and why it is necessary. In FY 1982 you plan to do flight testing--what is your schedule for this system in fiscal years beyond 1982? If all goes as planned, when will the system be fully operational?

Answer. The Airborne Profiling System has been under development since 1975 with a series of contracts with the Charles Stark Draper Laboratory and will augment current field and photogrammetric survey activity presently being used. With the continuing rise in salaries and the increasing number of surveys required to support Geological Survey programs, it is expected this system will provide a cost effective means for conducting surveys very quickly, and with reduced labor costs.

The instrument package consists of an inertial navigation unit to monitor the aircraft's position and elevation, a laser unit to measure the distance to a point on the ground directly under the aircraft, a TV camera to record the image of the point on the ground, and a second laser unit to measure distances and directions to prepositioned survey points on the ground. The system will establish ground profile data in preselected locations to an accuracy of ± 0.5 feet vertically and ± 2.0 feet horizontally. To maintain this accuracy level, reflectors are positioned on survey points within the project area so that one can be sighted at three-minute intervals during the survey mission.

Engineering flights and system trials are to begin in FY 1982 and are to be completed in FY 1983. The system will then be operationally tested over a two-year period on several tasks:

- Doing profile surveys for different kinds of projects involving water resources and topographic surveys.

- Positioning airborne sensors such as aerial cameras, magnetometers, and side looking radar.

- Supplementing and refining measurements of the gravity field.

These application tests will be completed in FY 1984 and the system will then be applied to production surveying work.

Question. What is the average time required to process a routine request at the Cartographic and Geographic Information Center? How does this compare with the past 5 years? How many of the some 260,000 CGI requests expected in 1982 would be considered routine?

Answer. Turnaround time averages between 6 and 10 days, with less than 100 inquiries backlogged per week. Earlier backlogged letters amounted to as many as 2000 per week, and turnaround time ranged from 30 to 90 days.

We estimate that 20 percent of our inquiries require some research and 80 percent are routine.

Question. You have requested an additional $500,000 for your information system, including providing new computer access to certain USGS information files. How much of the $500,000 will be directed to this activity? While such computer access could likely triple the potential availability of information as you have indicated, will there actually be a corresponding increase of public use of such a system? Is it safe to say this system is designed for your own use as much as for the public's?

Answer. Of the $500,000 requested for 1982, we anticipate that $300,000 will be used for providing computer access to certain USGS information files.

We are experiencing about a 14 percent increase of inquiries from year to year. As the more advanced systems come on line we expect to triple the amount of information available and expect a similar increase in public inquiries. This increase will be further supported by an expansion of the network of State affiliates, the implementation of an "800" telephone number and an accelerated communications program. The improved system will enhance USGS's ability to respond to public needs for cartographic and geographic data.

Geologic and Mineral Resource Survey and Mapping

Question: Your budget request for Geologic and Mineral Resource Surveys and Mapping is $175.4 million, an increase of $22.0 million over 1981 appropriations to date and $9.8 million over the 1982 base. The predominant item within your budget request for Geologic and Mineral Resource Surveys and Mapping is the Earthquake Hazards Reduction program which has requested some $34.4 million for FY 1982. Of this $34.4 million, how much do you intend to spend on earthquake prediction activities?

Answer: In FY 1982, we are planning to spend $16.8 million, $800,000 more than the estimated spending level in FY 1981. This level is slightly above the option B (intermediate) level recommended in the Newmark-Stever report, "Earthquake Prediction and Hazard Mitigation Options for USGS and NSF Programs," for FY 1978.

Question. How long has the Geological Survey been working in the field of earthquake prediction?

Answer. We began research on earthquake prediction following the Prince William Sound, Alaska, earthquake of March 27, 1964. This great earthquake caused considerable economic loss as well as deaths and injuries. This research effort, which was relatively small initially, was intensified following the San Fernando, California, earthquake of February 9, 1971. The San Fernando earthquake, a moderate earthquake, caused about the same level of economic loss ($500 million in comparable dollars) as the Prince William Sound, Alaska, earthquake and scores of deaths and injuries.

Question: How much has been spent for earthquake prediction since the Earthquake Hazards Reduction Act of 1977 was passed?

Answer: $62.917 million ($15.575 million in FY 1978, $15.764 million in FY 1979, $15.604 million in FY 1980, and $15.974 million estimated for FY 1981). This expenditure is approximately 0.1 percent of the sudden loss potential of a major earthquake in southern California.

Question. Have we made any real progress toward truly predicting earthquakes?

Answer. Yes, we have made substantial progress toward predicting the size, time, and location of future earthquakes. The most significant accomplishments of this program element include: (1) establishing the seismic "gap" hypothesis for specifying recurrence intervals of major earthquakes along crustal plate boundaries; this technique gives a useful long-term forecasting capability, (2) the correlation of variations in regional strain in southern California with increased seismicity, a phenomenon that is used as a basis for earthquake prediction in other parts of the world, (3) laboratory and field studies showing that slow premonitory fault slip or fault-zone weakening precedes some, if not all, major earthquakes by a few hours or days--a possible key to short-term earthquake prediction at a specific locality on an active fault, and (4) the repetition of time and space characteristics of earthquake sequences that occur decades apart; this physical phenomenon was the basis for issuing an Earthquake Hazard Watch 2 days before a magnitude 6.0 earthquake occurred near Mammoth Lakes, California, in May 1981. The dense instrumentation networks that have been established in the past several years in central and southern California, Utah, Missouri and in other locations for earthquake prediction research are the key to additional advances in the capability to predict precisely the size, time, and place of future damaging earthquakes. Each additional year of data and experience improves the predictive capability substantially.

Question. Will we ever be at a point where we can predict earthquakes a few hours or days in advance rather than a few years?

Answer: From numerous reported instances of unusual short-term geophysical phenomenon preceding earthquakes, we are confident that reliable, short-term prediction is technically feasible provided that an adequate observational data base can be established. The dense instrumentation networks deployed in central and southern California, Utah, Missouri, and other areas are collecting such a data base now.

Question. You indicate that there is a 50 percent probability that a major earthquake will occur on the southern San Andreas fault within the next 30 years. Does it take millions of dollars to make such a prediction? Will you ever be able to pin it down closer than 30 years?

Answer. The statement that the probability of a major earthquake along the southern San Andreas fault is about 50 percent in the next 30 years is based mainly on geologic evidence. Detailed geologic studies and excavations along the San Andreas fault trace have provided conclusive evidence of 10 events occurring since 500 A.D.; an average of once each 145 years. They provide a basis for a long-term prediction that, at present, cannot be refined closer than 30 years. However, other types of geophysical data such as: the changes in the space and time patterns of small to moderate earthquakes, changes in the manner of regional strain accumulation, unusual behavior of hydrologic and geochemical indicators, and changes in other geophysical phenomena provide a basis for short-term predictions. Once an adequate data base of several variables at a site has been established, reliable short-term probability statements of earthquake predictions can and will be made.

Question. Have States such as California joined you in cost-sharing the various monitoring and other earthquake prediction activities?

Answer. Although some discussions about cost-sharing have taken place, no cost-sharing arrangements have been implemented with respect to monitoring and research. However, California is actively involved as a partner in the Southern California Preparedness project. The goal of this cooperative Federal-State-local project is to accelerate preparedness at all levels for a damaging earthquake in southern California. In 1976 we advised the State of California of the increasing likelihood of a major earthquake in southern California.

Question. How long is the current phenomenon at Mount St. Helens expected to continue? As a result of the Mount St. Helens eruption, has GS decreased any of its volcano hazard work conducted in Hawaii? What planning and construction work is needed to upgrade the Hawaiian Volcano Observatory? How much is this work expected to cost and why is it necessary?

Answer. There is, of course, no sure way to determine how long the current eruptive activity can be expected to continue. However, by analogy to its historic behavior--when intermittent activity occurred for 26 years (1831-1857) in the 19th century--Mount St. Helens could continue to be intermittently active for years and possibly decades. Similar volcanoes around the world show comparable patterns and durations of intermittent activity: for example, Bezymianny, Kamchatka (1956-1979); Santa Maria, Guatemala (1902-present); and Mt. Trident, Alaska (1949-1974). Moreover, during the mid-19th century, other Cascade volcanoes (Rainier, Baker, Hood, and Lassen) in addition to Mount St. Helens experienced eruptive activity, and there were instances when more than one volcano was active per year.

Despite the 1980-81 eruptions at Mount St. Helens, volcano monitoring of the Hawaiian volcanoes has not been notably decreased; however, the staff at the Hawaiian Volcano Observatory (HVO) is stretched very thin at times to assist at Mount St. Helens. Because some of the HVO staff were pulled off for rotational short-term duty at Mount St. Helens, some volcanic hazards mapping activities in Hawaii were delayed.

Architectural and engineering planning to upgrade the Hawaiian Volcano Observatory is fully complete, and construction can begin immediately in FY 1982 with availability of funds and following award of contract. The joint USGS-National Park Service proposed upgrading is urgently needed because the HVO must move out of its unsafe, cramped, dilapidated 56-year-old building into new quarters, and the NPS wants to renovate the present building for use as a visitor center to improve its park interpretive programs (USGS-NPS Memorandum of Understanding executed in November, 1978). The estimated cost of the proposed upgrading is $4.0 M (estimate good until October 1, 1981).

Question. On page 72 of your justification you list a number of hydrologic activities at Mount St. Helens as accomplishments of the past year. Can you give the Committee some brief details of what you learned from these hydrologic studies, such as what is the effect of mudflow and ashfall on the biological activities within surrounding lakes and streams?

Answer. Geological Survey studies at Mount St. Helens have documented that engineering control measures (dredging, retention dams) coupled with a drier than normal 1980-81 winter season have held post-eruption hydrologic impacts to manageable levels. However, we have found that the 17 mile debris avalanche in the North Fork Toutle River (from the landslide which accompanied the eruption) is highly erodible and that the ash cover on the surrounding landscape has caused peak flood discharges from storms to increase by about 20 percent. Consequently, over a wide range of streamflows, the Toutle River is discharging between 100 to 1,000 times the sediment loads observed prior to the eruption. These preliminary results indicate that a wet winter in 1981-82 could cause massive erosion from the upper part the North Fork Toutle River, possibly resulting in heavy sedimentation in the Cowlitz River.

During the past year the channel of the mid and lower part of the North Fork Toutle River has progressively filled with sediment. As each storm occurred, the streamflow was forced from the normal course, causing massive erosion of the streambanks and destruction of roads, prime timber, and grazing lands. Erosion of large sections of the streambanks is likely to continue for many years, and could even accelerate during wet years. Resource planning along the Toutle River needs to take this natural consequence of the eruption into account.

Considerable hazard is also associated with three lakes newly formed by the debris avalanche along the North Fork of the Toutle River. Coldwater Lake, presently the most dangerous of these lakes, ultimately could store more than 100,000 acre feet of water. If Coldwater Lake overtopped and breached its dam catastrophically, a massive mudflow could result having a peak discharge several times larger than the mudflow down the North Fork Toutle on May 18, 1980. Progress has been made in understanding the geological and hydrologic behavior of the dam which forms Coldwater Lake. As a consequence, the Corps of Engineers is planning to construct a drainage ditch to maintain the lake level considerably below the top of the dam, thereby preventing a catastrophic overtopping.

Water quality studies have shown that changes in the content of dissolved constituents in streams and lakes impacted by ashfall were minor and transitory. However, there have been marked effects on the quality of the water in Spirit Lake and in the lakes formed on the debris avalanche. In this area, decaying logs and minerals in the debris have resulted in the water having high contents of potentially toxic trace metals and trace organic compounds such as phenols.

Question. How much of the requested budget for Volcano Hazards will be used for the increased cost of helicopter services? How much has the use of helicopters under this account increased since the eruption of Mount St. Helens?

Answer. Approximately $1.5-2.0 M of the requested budget will be used for helicopter services, which will cost more in FY 1982, not only because of inflation, but also because of contracts requiring clauses to accommodate excessive wear-and-tear caused by operations under ash conditions. Ash is an extremely gritty material and harmful to helicopter engines and surfaces, resulting in extraordinary and more costly maintenance. Because the catastrophic eruption of May 18, 1980, destroyed the road network in a wide sector north and west of the volcano, helicopter access has become the only means to field sites to conduct monitoring and volcanic hazards assessment activities. In addition, the increased helicopter services are also essential for the installation of monitoring systems on other potentially hazardous Cascade volcanoes planned for investigations during the next few years. Most of these areas are relatively inaccessible by road and helicopters provide the only efficient means of repeatedly reoccupying and servicing monitoring stations. Helicopters provide the means of accomplishing in a single day, what might otherwise require weeks, or be impossible to accomplish at all.

Question: You have requested some $2.8 million for Ground Failure and Construction Hazards, which is an increase of over $1 million from the 1981 appropriation. While this is still a relatively small account, why are you requesting a 36% increase over last years' funds?

Answer: Because of the large scope of ground failure problems, a long-range program of research is being developed. The proposed increase for FY 1982 focuses on landslides and mud flows, and the establishment of a centralized nationwide exchange for ground failure hazards information.

Despite widely recognized imperatives (losses are estimated to exceed $4.0 billion losses annually) no coordinated National program to reduce the effects of ground-failure hazards has been undertaken, although this program and its predecessors have undertaken process studies that provide a major basis to support a new and more vigorous program effort. Present activities of this program are funded at levels too low to produce the timely overall scientific and technical understanding of ground-failure hazards on which development of mitigation measures must be based, and the technology-transfer function itself is severly inhibited. Need for a ground-failure hazards mitigation program has been repeatedly stated, most thoroughly during the mid 1970's in a series of National Science Foundation RANN reports under the leadership of G. F. White. Present efforts, though individually productive, consist of individual investigations into a variety of ground failure phenomena.

The proposed increase begins to address a gap in the Geological Survey's natural geologic hazards program. At the present time, the Federal Government through the Geological Survey, is developing comprehensive programs for providing hazard warnings and assistance in such areas as volcanoes and earthquakes. But presently, there is no such comprehensive program in operation for landslides or other ground failure hazards, even though landslides and mudslides are specifically enumerated events (along with volcanoes and earthquakes) in the provisions of the Disaster Relief Act of 1974 (PL 93-288) that call for the Federal Government to issue warnings of disasters to State and local officials and provide technical assistance to them concerning the warnings.

Question: Within the justification, I noticed no specific reference to studying the sinkhole problem now occurring in this country. Would this activity be conducted in this account (Geologic and Mineral Resource Surveys and Mapping) or in account under Water Resources Investigations?

Answer: The justification on p. GS-78, lists subsidence as one of the kinds of ground failure to be investigated by the Ground Failure and Construction Hazards Program. The "sinkholes" are subsidence features developed by the collapse of solution caverns, and research on the mechanisms and processes of their formation will continue under the Ground Failure and Construction Hazards Program. Similar collapse features developed over old coal mine workings, burning coal beds, solution salt mines, and natural limestone caverns are also under investigation. It may be important to note, however, that the investigations of any specific "disaster" site can be undertaken only at the request of another Federal agency responding to the "disaster" or, in rare cases, where the "disaster" site offers unique opportunities for research on processes and mechanisms.

Sinkhole problems in the U.S. are also being investigated by the Water Resources Division of the U.S. Geological Survey in 31 of the eastern States, with funding provided by the Reactor Hazards Research Program of the Geologic Division. In addition, the Florida District of the Water Resources Division is currently conducting an investigation of the occurrence and causes of sinkhole formation in west-central Florida as part of the existing cooperatively funded (Water Resources Investigations) Program with State agencies.

Question: In light of the sinkhole problems that are occurring, what is GS doing or what do you plan to do in response? Will you be requesting reprogramming of 1981 funds to work on the problem? How much do you anticipate spending on this problem in FY 1982?

Answer: The Geological Survey has responded to inquiries from Florida officials on the sinkhole problem in the State. Water Resources Division personnel have met with and briefed members of the Governor's staff, and information was presented on the locations of sinkholes and why and when sinkholes occur. The Florida District of the Water Resources Division is preparing for presentation to the State a proposal for an investigation that would delineate sinkhole-prone areas. The investigation would be part of the ongoing Federal/State Cooperative Program.

Some Water Resources Divison funds for sinkhole studies in FY 1981 will be required, but it will be accomplished at the District or Regional level. Personnel and funds will be shifted from lower priority work.

Question: Under the Reactor Hazards Research account, you conduct geologic analysis prior to licensing. What is the average cost per project? What is the average time period necessary to conduct this research activity? Can this time period be safely reduced? Does the uitlity company planning to build the reactor reimburse you for the research you perform? If so, how much?

Answer: The Reactor Hazards Research Program does not do site specific geologic research for proposed nuclear power plants, the Reactor Hazards Research Program conducts topical and regional geologic studies which can be used to delineate those areas within which specific sites could be developed in confidence that the risk from geologic hazard is minimal or for which there are adequate engineering safe guards. Under an interagency agreement between the USGS and the Nuclear Regulatory Commission, the USGS provides advice and review comments of the geologic and seismologic data submitted by utilities as part of their licensing requirements. Such reviews and advice are provided to Nuclear Regulatory Commission on a case-by-case basis for which the Nuclear Regulatory Commission reimburses the USGS. Utility companies do not reimburse USGS for the research it performs.

Question. Explain for the Committee if you would please, the roles of the Geological Survey and the Department of Energy in the energy geologic survey effort. How is the information used by each organization once it is compiled?

Answer. In energy geologic surveys, the Geological Survey is responsible for gathering and analyzing geologic data related to nonrenewable energy resources and making regional and national assessments of these resources, except for uranium, which is assessed by the Department of Energy (DOE). The Survey uses these analyses and assessments in planning for onshore and offshore lease sales and makes them available to other government agencies and the general public for policymaking and planning purposes. The principal role of DOE in energy geologic surveys is to explore or demonstrate the feasibility of developing and utilizing nonrenewable energy resources. This function may involve geologic studies and regional resource assessment, which DOE frequently asks the Geological Survey to perform. The eastern gas shale and western tight gas sands projects are two examples of joint Geological Survey-DOE efforts in energy resources assessment and development feasibility investigations. DOE also collects energy reserve data from industry and energy resource information from the Geological Survey for use in its national energy forecasting studies.

Question. The Department of Energy contributed a portion of the cost of revising the Geological Estimates of Undiscovered Recoverable Oil and Gas Resources in the United States. If so, how much?

Answer. The Federal Energy Administration (DOE) contributed $153K to the Geological Survey's initial (1975) appraisal of domestic undiscovered recoverable oil and gas resources but did not contribute monies to the recent update of the oil and gas resources of the United States. In 1978, DOE contributed $200K for oil and gas data development, which is vital in oil and gas appraisal work.

Question. Similarly, is DOE sharing the cost of your joint study of oil and gas reserves and production potential in several foreign countries?

Answer. DOE and the Geological Survey work together on the Foreign Energy Supply Assessment Program (FESAP), which is a small part of the USGS overall world energy resource assessment program. FESAP focuses on the analysis of production potential in the major free world exporting countries. The USGS makes the geologic analysis and DOE performs the production analysis. The 1979 Memorandum of Understanding between DOE and USGS called for a $1,000,000 program contribution by DOE over a 5-year period with funds reimbursed to the Survey upon completion of reports. The record of funds reimbursement is as follows:

Fiscal Year	
1979	$263,000
1980	113,000
1981 (EST)	185,000
1982 (EST)	125,000

Question. In this same regard, how much funding has the Department of Energy provided for the National Uranium Resource Evaluation? What is the distinction between your activities in this area and those of the Department of Energy outlined in the Memorandum of Understanding?

Answer. The Department of Energy (DOE) has provided Geological Survey with about $10 million, spread over the FY 78-81 period, for participation in the National Uranium Resource Evaluation (NURE). DOE's expenditures for NURE totaled approximately $300 million during this period.

The Department of the Interior (Geological Survey) "has general statutory responsibilities for research and investigation necessary to understand, conserve and develop mineral and water resources of the United States, and within this broad authority also carries out research activities related to the resources of energy-related minerals, including uranium and thorium" (from Memorandum of Understanding, 1977).

ERDA (now DOE) "has general statutory responsibilities for planning and developing a national program in energy research and development. This program is concerned with a variety of energy options and alternatives. The nuclear energy area covers nuclear reactor development and the fuel cycle, including provision of enrichment services. The extent, availability and economics of uranium resources are increasingly critical to major decisions in these areas . . ." (from Memorandum of Understanding, 1977).

Question. How much coal reserves would you estimate still remain on coal lands? For the record, please provide a list by State of the total amount of such reserves.

Answer. The estimated coal reserves in the United States is approximately 475 billion tons. The following table reflects coal reserve base by State. Source: "Demonstrated Reserve Base of Coal in the United States on January 1, 1979," May, 1981, U.S. Department of Energy, Energy Information Administration. GPO Stock Number: 061-003-00177-7.

Table 2.- Demonstrated Reserve Base[a] of Coal in the United States on January 1, 1979, by Rank (Million Short Tons)

State[b]	Anthracite	Bituminous	Subbituminous	Lignite	Total[c]
Alabama----------	-	5,676.8	-	1,083.0	6,759.8
Alaska-----------	-	697.5	5,444.0	14.0	6,155.5
Arizona----------	-	424.3	-	-	424.3
Arkansas---------	96.4	289.0	-	25.7	411.0
Colorado---------	25.5	9,106.3	4,117.3	2,965.7	16,214.7
Georgia----------	-	3.7	-	-	3.7
Idaho------------	-	4.4	-	-	4.4
Illinois[d]-------	-	67,705.0	-	-	67,705.0
Indiana----------	-	10,621.1	-	-	10,621.1
Iowa-------------	-	2,198.6	-	-	2,198.6
Kansas-----------	-	994.8	-	-	994.8
Kentucky, East--	-	13,098.2	-	-	13,098.2
Kentucky, West--	-	21,141.9	-	-	21,141.9
Maryland---------	-	826.2	-	-	826.2
Michigan---------	-	127.7	-	-	127.7
Missouri---------	-	6,077.2	-	-	6,077.2
Montana----------	-	1,385.4	103,317.8	15,765.7	120,468.8
New Mexico[d]-----	2.3	1,842.6	2,696.6	-	4,541.5
North Carolina--	-	10.7	-	-	10.7
North Dakota----	-	-	-	9,971.2	9,971.2
Ohio-------------	-	19,034.7	-	-	19,034.7
Oklahoma---------	-	1,644.0	-	-	1,644.0
Oregon-----------	-	-	17.5	-	17.5
Pennsylvania----	7,095.7	23,332.1	-	-	30,427.9
South Dakota----	-	-	-	366.1	366.1
Tennessee--------	-	997.7	-	-	997.7
Texas[d]----------	-	-	-	12,693.5	12,693.5
Utah-------------	-	6,500.5	1.1	-	6,501.6
Virginia---------	125.5	3,412.4	-	-	3,537.9
Washington-------	-	255.3	1,316.8	8.1	1,580.2
West Virginia[d]--	-	39,984.9	-	-	39,984.9
Wyoming[d]--------	-	4,482.0	65,532.0	-	70,014.0
Total	7,345.4	241,874.9	182,443.0	42,892.9	474,556.2

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[a] Includes those parts of the measured and indicated resource categories as defined by the EIA and represents 100 percent of the coal in place.

[b] Excludes coal-bearing States in which either the resources are not currently economically recoverable or the publicly available resource data do not provide the detail required for DRB delineation.

[c] Data may not add to totals shown due to rounding.

[d] Data shown not completely reconciled with DRB assessment by State (See Appendix B).

Idaho Aquifer

Question. The Department of Energy has a facility in my State, the Idaho National Engineering Laboratory (INEL). Its assignments include, among others, water reactor safety, materials and fuels testing, naval propulsion, fuels reprocessing, and advanced reactor development. Liquid radioactive waste is generated by this work and underground injection into the Snake River Aquifer is used as a disposal method. The U. S. Geological Survey has conducted a continuous research and monitoring program for these disposal procedures at the INEL since the Laboratory's initiation in 1949. In fact, over 100 wells are being drilled on the southern perimeter of the INEL site because of actions I took in the Senate Appropriations Subcommittee on Energy and Water Development.

What is the status of this monitoring work?

Is it true that there is no significant evidence from the currently available information to indicate any health or safety problem with current disposal practices?

Is it also true that the off-site waters of the aquifer are not now contaminated from current practice nor are they expected to be in the future? Also, are the levels of contamination within INEL site boundaries well below applicable standards and expected to remain so?

Answer. #1. The U. S. Geological Survey has continued to monitor the movement of radioactive and chemical wastes in the Snake River Plain Aquifer at the INEL. Eight new monitoring wells were recently drilled near the southern INEL boundary, as a result of Senator McClure's action. Trace concentrations of tritium are present, as expected, in two of the wells about 2 miles inside the boundary. No waste products have ever been detected off-site.

#2. The concentrations of waste products in the aquifer are reduced by several processes as they move southward. At the first downstream supply wells, the Central Facilities Area, the waste-product concentrations are below State drinking-water standards except for tritium, which is slightly above the standard. No significant health or safety problems have been identified.

#3. Computer projections indicate that some waste products will eventually migrate off-site but their concentrations in ground water will be well below Federal and State drinking-water standards.

National Petroleum Reserve in Alaska

Question. How far along are you in the termination of the NPRA drilling program? Will the $2.7 million you proposed for deferral to 1982 be sufficient to complete this termination?

Answer. Four of the five drilling rigs and most of the contractor-owned construction and drilling equipment have been demobilized and removed from the Reserve. One drilling rig is stacked at Camp Lonely awaiting arrival of COOL Barge this summer for retrograde to Seattle. The field seismic data acquisition program was completed on April 29, 1981, and the contractor has removed his field equipment from the Reserve to the Umiat storage area. Surplus drilling materials and supplies are being inventoried and prepared for sale in place. The Air Force is preparing to take back control of the Lonely airstrip and airport improvements. Camp Lonely is being prepared for "mothball" status by December, 1981. The camp will be left in a cold state and efforts are underway to have the facilities protected by guard service provided through an interservice support agreement with the Air Force. Contractors are preparing final reports and completing the closeout of fiscal and administrative aspects of the program.

The $2.6 million for Fiscal Year 1982 is to support the operation and maintenance of the Barrow gas fields. These funds, together with carryover funds, will be sufficient to maintain the gas operation in Fiscal Year 1982. Carryover funds will be used for closeout of the exploration program.

Question. What is the Geological Survey doing with the drilling rigs demobilized as a result of the termination activities? How much has the Geological Survey paid so far to have these rigs moved and stored?

Answer. Four of the five rigs used on NPRA in Fiscal Year 1981 have been demobilized from the Reserve and the Geological Survey is not paying any further for these rigs. The fifth rig has been moved to Camp Lonely for barge shipment in August to Seattle, Washington. The Geological Survey is contractually obligated to pay $2,500 per day stand-by charge until the rig is off loaded in Seattle. This rig is awaiting sealift because it cannot be transported by aircraft.

Question. When will the final report on the NPRA exploration program be completed and submitted to Congress?

Answer. The Annual Report to Congress for Fiscal Year 1981 will be submitted to Congress on October 1, 1981. The NPRA contractors are preparing detailed final reports on the construction, geological, geophysical, and administrative aspects of the exploration program. In addition, the Geological Survey is preparing a manuscript for publication in the Professional Paper series summarizing the results of the program and reporting on several research studies undertaken during the program. All reports and data will be available to the public.

Question. As the Office of Naval Research will discontinue operation and maintenance of the gas fields at Point Barrow, Alaska, in Fiscal Year 1982, when will the Geological Survey begin to seek competitive bids for the work which remains to be accomplished?

Answer. The Geological Survey has issued on June 8, 1981, a competitive solicitation seeking a firm to operate and maintain the gas fields for all of Fiscal Year 1982.

Question. With the closure of the Naval Arctic Research Laboratory, will the gas field be profitable for a private investor? How will the gas rate structure change as a result of the closure?

Answer. Section 104, Title 1 of Public Law 94-258, directs the Secretary of the Interior to operate the South Barrow gas field and provide gas to the native village of Barrow and other communities at "reasonable and equitable rates." The closure of NARL is not related to the Secretary of the Interior's responsibility to provide gas in the Barrow area. The Government has been providing gas in Barrow at a rate that is below the cost of operation.

The gas rate structure was established by the Navy and approved by Congress before the transfer of the Reserve to the Secretary of the Interior. Closure of the NARL does not affect the established rate structure.

SUBCOMMITTEE RECESS

Senator McClure. Thank you very much. That will conclude the hearing this morning. We will stand recessed until 9 a.m., Thursday, June 4, when we will receive testimony from the Office of Territorial and International Affairs.

Thank you very much.

[Whereupon, at 11:21 a.m., Thursday, May 21, the subcommittee was recessed, to reconvene at 9 a.m., Thursday, June 4.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1982

THURSDAY, JUNE 4, 1981

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 9:05 a.m., in room 1114, Everett McKinley Dirksen Senate Office Building, Hon. James A. McClure (chairman) presiding.

Present: Senators McClure and Johnston.

DEPARTMENT OF THE INTERIOR

OFFICE OF TERRITORIAL AFFAIRS

ADMINISTRATION OF TERRITORIES

STATEMENT OF RUTH G. VAN CLEVE, DEPUTY ASSISTANT SECRETARY, POLICY, TERRITORIAL AND INTERNATIONAL AFFAIRS

ACCOMPANIED BY:

- JOHN E. DE YOUNG, SENIOR STAFF ASSISTANT, PACIFIC AFFAIRS, TERRITORIAL AND INTERNATIONAL AFFAIRS
- MATTHEW N. NOVICK, DIRECTOR, FEDERAL COMPTROLLER'S OFFICES AND FINANCIAL MANAGEMENT TECHNICAL ASSISTANCE, TERRITORIAL AND INTERNATIONAL AFFAIRS
- FRANK X. SOLOMON, SYSTEMS ACCOUNTANT, TERRITORIAL AND INTERNATIONAL AFFAIRS
- HUGH J. GALLAGHER, BUDGET OFFICER, TERRITORIAL AND INTERNATIONAL AFFAIRS
- DANIEL MAC MEEKIN, EXECUTIVE DIRECTOR OF THE NORTHERN MARIANA ISLANDS COMMISSION ON FEDERAL LAWS

PREPARED STATEMENT

Senator MCCLURE. Good morning. This is the time scheduled to hear the fiscal 1982 budget request for the Office of Territorial and International Affairs.

We will receive testimony from the administration this morning. Then, beginning at 1 p.m. this afternoon, we will receive testimony from representatives of the governments of American Samoa, Guam, the Northern Marianas Commonwealth, the Virgin Islands, Palau, the Federated States of Micronesia and the Marshall Islands.

I should mention again at this point that we do regret the necessity for the cancellation of our May 14 hearing and apologize for any inconvenience it may have caused. Circumstances beyond our control at that time—specifically the full Appropriations Committee markup of the 1981 supplemental rescission bill—forced us to reschedule that hearing to today, and we thank the Office of TIA for assisting us in the effort.

The total fiscal 1982 request for the territories and the trust territory is $201,754,000, a decrease of some $18,534,000 from the 1981 appropriation. Of the total, some $80,854,000 is requested for administration of territories; $72,500,000 is requested for the Trust Territory of the Pacific Islands, and $48,400,000 is requested for fiscal assistance payments to Guam and the Virgin Islands.

Representing the administration this morning will be Mrs. Ruth Van Cleve, Deputy Assistant Secretary for Territorial and International Affairs.

Mrs. Van Cleve will also be representing the Office of the High Commissioner, the Trust Territory of Pacific Islands.

Also with us this morning is Mr. Sherrill Smith, representing the Officer in Charge of Construction, Naval Facilities Engineering Command.

Mrs. Van Cleve, it is always a pleasure to have you here before this committee or the other committee on which I serve. You may introduce whatever associates you have with you that should be identified for the record, and then proceed to highlight your statement.

Your full statement, of course, will be included in full in the record, and we will then proceed with Mr. Smith's testimony before turning to our questions.

[The statement follows:]

STATEMENT OF RUTH VAN CLEVE

It is a pleasure for me to appear again before this Subcommittee to speak to the FY 1982 budget requests for the territories and the Trust Territory of the Pacific Islands. The budget request this year is an austerity budget, representing the concerns of the Reagan Administration for fiscal restraint.

We realize that this year, as has been the case in years past, there are many legitimate concerns and needs of our constituencies that we are simply unable to accommodate within the constraints under which we are working. What we are presenting, however, is our judgement as to how best to discharge our responsibilities within the financial resources that we seek.

FY 1982 Budget Request

The Administration's budget request for the territorial and Trust Territory governments for FY 1982 is a reduced request from FY 1981. Most of the reduction can be attributed, however, to the reduction of funding in the Trust Territory of the Pacific Islands Capital Improvement Program. All of the requests for funding from the territorial governments to the Administration could not be included in this request. The request before you, however, represents those items considered by them and by us to be of the highest priority.

The following outlines the territorial budget request for FY 1982:

The total budget authority requested for fiscal year 1982 is $153,354,000. This amount, which does not include the permanent/indefinite appropriation for fiscal assistance for the territories of Guam and the Virgin Islands, represents a net decrease of some $13.3 million from the amount appropriated to date for fiscal year 1981, and it provides funding for the Trust Territory of the Pacific Islands, the Northern Mariana Islands, Guam, American Samoa, the Virgin Islands, the Federal Comptrollers in each of the territories, the operations of the Office of Territorial and International Affairs, including technical assistance support, and for the Northern Marianas Federal Laws Commission.

$72,500,000 requested for the Trust Territory of the Pacific Islands

The United States, through the Department of the Interior, administers the Trust Territory of the Pacific Islands under a Trusteeship Agreement with the Security Council of the United Nations. As Administering Authority, the United States has obligated itself to promote political, economic, and educational development and to improve the health and well-being of the Micronesians through better community facilities and services. The Trust Territory covers a water area of three million square miles with a total land area of 516 square miles. The population (excluding the Northern Marianas) is approximately 120,000.

The FY 1982 budget proposed for the Trust Territory headquarters and the three emerging political entities is $72,500,000, a decrease $21.9 million from the appropriation for Fiscal Year 1981. Funding is included for operations, capital improvements, and the Enewetak support program.

Operations Budget

The FY 1982 budget proposed for the Trust Territory Headquarters and the three entities is $66,300,000, an increase of $10.0 million from the 1981 level. This amount would provide funding for the operations of the new governments and for the provision of local services. In addition, the operations funding will continue the headquarters support and the support of the College of Micronesia. The operations funding is to be divided as follows: for Headquarters, $6,400,000; for the College of Micronesia, $800,000 in direct funds, with an additional $600,000 to be provided by the three entities, for a total of $1.4 million; for the Marshall Islands Government, $9,843,000; for the Republic of Palau, $9,043,000; for the Federated States of Micronesia, $32,814,000; for enhanced operations and maintenance, $4,900,000; and to be held as a reserve for increased fuel costs, $2,500,000.

Other Funding

The remainder of the Trust Territory budget is comprised of capital improvement funds and the Enewetak support programs. In the area of capital improvements, $3.0 million would be the United States' contribution to the three government entities for A&E work for capital relocation. The sum of $2.5 million is requested to restore prior year construction funds reprogrammed for headquarters operations and for the translation of the initialed Compact of Free Association. Finally, the request includes $700,000 for support of the Enewetak people.

$80,854,000 requested for Administration of Territories

$23,567,000 requested for the Northern Mariana Islands

The requested funding for FY 1982 includes the Covenant grant, with an increase of $2 million, as specified by law. This funding will provide $2,805,000 for economic development, $13,225,000 for operations, and $6,412,000 for capital improvements. In addition to the Covenant funding, the request includes $1,125,000 for architectural and engineering work preliminary to the eventual construction of new hospital facilities on Saipan.

$10,047,000 requested for Guam

The requested funding includes $250,000 for the Guam Economic Development Loan Fund and $9,797,000 for capital improvements. The capital improvements are in the areas of school renovation, $1,008,000; water system development, $2,002,000; port expansion, $1,950,000; roads and bridge construction, $4,500,000; and miscellaneous small projects, $337,000.

$23,713,000 requested for American Samoa

The requested funding includes $250,000 for American Samoa's economic development loan fund, $18,400,000 for local government operations, $150,000 for the support of operations on Canton Island, and $4,913,000 for capital improvements. The capital improvements are in the areas of education, $975,000; fisheries development, $525,000; water systems development, $1,988,000; and roads and docks, $1,425,000.

$18,200,000 requested for the Virgin Islands

The requested amount represents the final increment in the three year funding for new hospital facilities in the Virgin Islands.

$3,216,000 requested for the Federal Comptrollers

The request, with an increase of $82,000 over the 1982 level, will provide direct funding for the Comptrollers' offices in American Samoa, the Virgin Islands, Guam, the Trust Territory and the Northern Mariana Islands. The functions of audit and technical assistance within the organizations have been administratively separated, with distinct lines of authority. Funding, however, has not been separated.

$1,911,000 requested for Territorial and International Affairs

The request for Territorial and International Affairs reflects an addition of $750,000 for technical assistance support costs. The 1982 program would be an extension of the 1981 program. The request includes $1,161,000 for the operations of the Washington office, an increase of $11,000 from the amount appropriated in 1981.

$200,000 requested for the Northern Marianas Federal Laws Commission

This request will provide the needed support for the completion of this Commission's work.

Local matching requirement

I should like to point out at this time that the funding for territorial construction projects, with the exception of the Trust Territory construction, funds under the NMI Covenant, and the Virgin Islands hospitals, reflects an increase in the local matching share from 10% to 25%. This increase was made necessary in order to retain substantial funding in the budget for all of the projects proposed in the January budget, and still keep within the tight constraints set for fiscal year 1982.

Comparison of Fiscal Year 1981 with Fiscal Year 1982 Budget Authority

(In thousands of dollars)

Bureau or Office and Appropriation Title	1981 Appropriation	Net Transfers and requested Supplementals	1981 Amount Requested	Fiscal Year 1982 Estimate	Increase or Decrease (-) 1982 compared with 1981
Territorial & International Affairs					
Administration of Territories	72,284	6,204	78,488	80,854	+ 2,366
Trust Territory of the Pacific Islands	94,354	168 1/	94,522	72,500	- 22,022
Payment to the U.S. Territories Fiscal Assistance	55,050	---	55,050	48,400	- 6,650
Total, Territorial & International Affairs	221,688	6,372	228,060	201,754	- 26,306
Outlays	293,674	6,370	300,044	205,611	- 94,433

1/ Civilian pay raise supplemental.

INTRODUCTION OF ASSOCIATES

Mrs. VAN CLEVE. Thank you very much, Mr. Chairman.

I would like to present our principal associates present this morning:

Mr. Gallagher, whom you know, is on my left. He is our budget officer, and he is the repository of almost all wisdom on the subjects we will be discussing today.

Also present is Matthew Novick, who is in charge of our technical assistance and comptrollers' activities; Mr. Solomon, who is responsible for the report recently submitted to you on trust territory capital improvement matters; John DeYoung, our senior staff assistant on Pacific Affairs; and Mr. MacMeekin, who is the Executive Director of the Northern Marianas Law Commission.

Also present is the acting comptroller from the Virgin Islands, Mr. Caton.

We regret that the comptrollers from Guam and Samoa, owing to distances, are not here today. We will attempt to substitute for them.

Mr. Gorrell from the Office of Budget is also present, and you have identified the OICC representative, Mr. Smith.

BUDGET REQUEST

I welcome the opportunity to give you a quick outline, Mr. Chairman, of the budget requests that we are here to justify today. The figures that I will present differ somewhat from those that you have just recited, because we have not included the automatic appropriations, those that will occur by operation of law. It is only the discretionary area that my figures will run to in the course of my next quick summary.

Senator MCCLURE. Let me indicate that I think all automatics, even though subject to payment by law, are subject to control by the Congress.

Mrs. VAN CLEVE. We certainly agree that that is so. I will, however, pass them for the moment on the supposition that the issue before us is not whether those statutes will at the moment be modified.

The total that we are here to justify is $153 million for fiscal year 1982. That is down from $166 million for fiscal year 1981. And, of course, it represents a substantial reduction over the figure contained in the January budget.

That $153 million is divisible roughly into two pieces; the $80 million that you mentioned for the territories in general, and for the other miscellaneous activities which I will mention in a moment, and $72 million for the trust territory.

TRUST TERRITORY BUDGET

The $72 million for the trust territory contrasts sharply with fiscal year 1981, and the explanation for the difference lies largely in the reduction in—indeed the virtual elimination of—capital improvement money for the trust territory for fiscal year 1982.

The operations budget for the trust territory, totaling about $66 million, is directed in very large measure to the three emerging entities; $9 million for Palau, almost $33 million for the Federated States of Micronesia, and approximately $10 million for the Marshall Islands.

The operations budget also contains slightly more than $6 million for headquarters, $800,000 for the college of Micronesia and a fuel reserve of $2.5 million.

As for capital improvements, we are seeking $3 million for architectural and engineering services in connection with the foreseen new capitals. That is a reduction of $18 million from the January budget of $21 million for that purpose. We foresee deferring the remainder of that $21 million request until fiscal year 1983.

Also under capital improvement items is the restoration of $2.5 million, which has been reprogramed, owing to the pressures of capital construction in the trust territory, and $700,000 for Enewetak support.

TERRITORIES BUDGET

Turning then to the other half of our budget, the $80.9 million for the territories in general, that is comprised of $23 million, approximately, for the Northern Marianas, largely funding that is required under the terms of the covenant. It includes, however, $1,125,000 for architectural engineering services for the foreseen new Northern Marianas Hospital.

For Guam, we have about $10 million, largely for capital improvements, schools, water systems, port expansion and the like, with $250,000 to be added to the economic development loan fund for Guam.

For American Samoa, $24 million, of which, somewhat more than $18 million would be for operations, and about $5 million for capital improvements. And again, those capital improvements relate to such public facilities as schools, water projects, roads and the like.

For the Virgin Islands, we are asking $18.2 million, which we hope and expect will be the final increment of the very large hospital funding project that we have been engaged in for the last several years.

For the comptrollers, a little more than $3 million. That compares roughly with what we have been seeking and obtaining in recent years.

For the Washington Office of Territorial and International Affairs, $1.9 million. That, except for a $750,000 component for technical assistance, again is roughly the same as the funding we have been receiving for the Washington office lately.

And finally, a small addition for the Northern Marianas Laws Commission of $200,000.

And that, Mr. Chairman, concludes my summary of my statement.

Senator McClure. Thank you very much.

Before proceeding to questioning, if you will just remain there at the table, we will hear from Mr. Sherrill Smith.

Mr. Smith. Good morning, Mr. Chairman. I am with the Naval Facilities Engineering Command here in Washington.

Capt. William O'Donnell, who is our Navy Officer in Charge of Construction in the Marianas, had planned to testify before your committee today. We were alerted by message that he could not make it.

PREPARED STATEMENT

I would like at this time with your permission, to submit his statement for the record and I would like to briefly summarize it.

Senator McClure. It will be placed in the record in full.

Mr. Smith. Thank you.

[The statement follows:]

Statement of Capt. William J. O'Donnell

I am very appreciative of this opportunity and privilege of appearing before this subcommittee, in behalf of the High Commissioner of the Trust Territory of the Pacific Islands, to present to you a report on the accomplishment, current status, and the future outlook of the capital improvement program.

My predecessor as Officer in Charge of Construction, Marianas, Gapt. Jack Weis, appeared before you last year, and gave you the program status as of that time, and testified in support of the fiscal year 1981 budget request. I mention this because the capital improvement program that I am addressing today, is a multiyear and incremental program providing basic infrastructure for Micronesia and needs to be viewed as a whole as well as from the standpoint of current progress in meeting the overall goals.

In last year's testimony we stated that fiscal year 1981 would be the culmination of the multiyear capital improvement program initiated in fiscal year 1976. We now find, however, that rising costs, largely due to inflationary escalations, and unforeseen additional costs make it difficult to complete certain projects within the present contract agreements without narrowing the current scope of work on those projects. Some other projects do not meet the scope of work set forth in the original plan, but are nevertheless satisfactory. On other projects a review will be made to determine if further modifications of scope need to be made or if the projects should be returned to the original scope.

As we move into the next year of the program, I would like to present to you, in a summarized form, the progress we have made; the ongoing work in which we are engaged, and the outlook for additional efforts which are required to bring the total program to a successful conclusion. Should you desire this information in greater detail, such information is available, and we shall, of course, be very happy to provide it to you.

With the fiscal year 1981 appropriation, which you have already made available to the trust territory, the dollar value of the overall program comes to $242 million, which includes $7.9 million in Federal Aviation Administration grants for airfield construction, and $23 million in grants from the Environmental Protection Agency for sewer programs.

As of this time we have obligated $170 million (or 70 percent) of the total available funds of $242 million; leaving an unobligated balance of $72 million (or 30 percent). For this purpose I am calling "obligated," all of those projects for which we have made construction contract awards, including set-asides for administrative and project overheads, postaward design requirements, and construction contingencies.

As of this date, 18 projects have been fully completed. These projects come to a programed dollar value of $25 million or 10 percent of the total program dollars of $242 million. These completed projects include docks, container storage yards, bridges, water and electrical system improvements, airfield paving and lighting, and sewer system improvements. The facilities constructed are in use and are contributing materially to an improved lifestyle thus providing stimulus to economic, social, and political development throughout Micronesia.

A large number of projects are now ongoing throughout Micronesia, specifically, a total programed dollar value of $145 million, representing 60 percent for ongoing projects.

Ongoing projects include such large projects as the airfields at Palau, Yap, Truk, and Kosrae; road construction in all the states, except the Marshalls, a major sewer system project at Truk; a dock construction at Ebeye, in the Kwajalein Atoll of the Marshalls, a marine resources dock at Truk; and various water and electrical projects, throughout the trust territory.

Taken from an overall standpoint, I would say that we are making good progress with the ongoing projects. I am sure you can appreciate that there are problems. Construction in Micronesia involves coping with remote areas, which generate serious communications, transportation, coordination, and supervision problems. Construction efforts are hampered by the large amount of rainfall that occurs in Micronesia. Furthermore, we are encountering many unforeseen conditions and requirements. This is largely because of the lack of historical construction and engineering data from previous construction efforts in the area, and because of the newly and rapidly evolving political status in Micronesia, bringing about changed requirements being expressed by the new leadership which differ from those requirements conceived, when the program was first developed in 1976.

Finally, there are projects, with a total value of $72 million or 30 percent of the program, which are still being scoped and designed at the present time. These, in the main, represent projects that were funded in fiscal years 1980 and 1981. Much of the remaining scoping and design efforts are in the areas of the new water resources development program, and the remaining for sewer projects. Here, there is a shifting of concepts from the more traditional treatment plant and collection systems, to innovative, simpler systems that are more suitable for the remote, relatively unsophisticated environments of the Micronesian Islands.

Mr. Chairman, this concludes the overview of the capital improvement program.

Even though I have personally been involved with the trust territory capital improvement program for a relative short period, I have found the program to be very engrossing and challenging. I also speak for my staff and for the Naval Facilities Engineering Command when I express pride, pleasure, and satisfaction for our involvement in the social, economic, and political development of Micronesia, at this historic moment of their emergence into a new status of greater self-government and self-sufficiency.

CAPITAL IMPROVEMENT PROGRAM

Mr. SMITH. As you know, the capital improvement program in the Trust Territory of the Pacific is a multiyear and incremental program providing basic infrastructure facilities.

Appropriations through fiscal year 1981 for this program are $242 million including grants from the Federal Aviation Administration for airfield construction, and from the Environmental Protection Agency for sewers.

At this time, some $170 million have been obligated, leaving an unobligated balance of $72 million.

Eighteen projects, totaling about $25 million, have been fully completed. A large number of projects are ongoing throughout Micronesia, totaling specifically $145 million. Overall, we have about $90 million of work physically put into place.

Good progress is being made considering the problems being encountered. Communications, transportation, and coordination difficulties are prevalent throughout Micronesia. Construction is hampered by the large amount of rainfall we have there, unforeseen conditions and requirements mainly because lack of historical construction and engineering data have presented some unique construction problems.

Also, requirements being expressed by the new leadership sometimes differ from those originally conceived.

All of these factors, plus rising costs and unforeseen additional costs are making it difficult to complete certain of the projects without narrowing their present scope.

The $72 million of unobligated projects are presently being scoped, or are in the design state. For the most part, these are projects funded in fiscal years 1980 and 1981. Much of the remaining work is in the area of new water resources development and sewer projects.

That concludes the summary of Captain O'Donnell's statement.

I will remain, if you desire, for questions and try to answer them.

Senator McClure. I will ask just a few questions, and I do hope you will carry one comment back: And that is the idea of unforeseen circumstances, unknown construction problems, and a lot of rainfall as reasons for cost overruns is pure garbage.

You can quote me to the Captain.

We have known for years that it rains there. The Navy has been out there for 50 years, almost. They were destroying things in the 1940's, and have been building things since the late 1940's. And to say they don't know what is happening out there, and thereby use that as justification for cost overruns is a little hard for me to accept.

It is a simple matter of bad estimates, of underestimates, and I hope we can do better than that.

And I hope you will inform the people with whom you work, that the committee expects better estimates of costs and will not casually accept the idea that, "Gee whiz, oh golly, look what happened. No, we can't do it for what we said we can do it for."

Senator McClure. We will have a few questions for you, if you can remain.

Mr. Smith. Surely.

75/25 COST SHARING ON CONSTRUCTION

Senator McClure. The administration has proposed that construction projects in the territories be funded at 75 percent. This is a reduction from the earlier proposed reduction of 90 percent.

What was the basis for deciding on 75 percent?

Mrs. Van Cleve. Essentially, that all components of the American political family have to bear some of the burdens that will arise as a result of the effort to cut back on big Government.

Senator McClure. So it's simply a question of a proportionate reduction? An arbitrary reduction in totals?

Mrs. Van Cleve. I think we have to resist the term "arbitrary," but I could not resist it for long. The same formula, of course, applies to all of the territories, and we recognize that they differ in terms of economic strength, so that to that extent, it is not a carefully honed formula.

At the same time, there are arbitrary formulas in grant programs historically that apply in the same fashion to the States, which, of course, also differ. Essentially, there has been a theory for some considerable time that the territories should contribute more significantly than they have done in the past toward the capital improvements funded by the Federal Government.

That was the rationale for the institution a year ago of the 90/10 formula. The conversion of 90/10 to 75/25 is simply a consequence of attempting a greater degree of frugality currently than we have experienced in the recent past.

Senator McCLURE. Including mirror taxes for fiscal year 1981, the Federal Government has provided 81 percent of the total Federal Government revenues to Guam, 67 percent to the Virgin Islands, 88 percent to Samoa, 87 percent to the Marianas, 91 percent to the trust territory.

Given that level of Federal support, doesn't a general matching formula of 75 percent result in matching Federal funds with other Federal funds?

Mrs. VAN CLEVE. It can certainly be so viewed. At the same time, funds that the Congress appropriates for the territories take on the character of local money as soon as the grant is made. So there is no philosophical or legal problem associated with the matching of Federal funds with Federal funds.

But of course, on any kind of displacement principle, you are entirely correct.

Senator McCLURE. When you say it takes on the character of local funds, you mean the funds are then subject to their discretion?

Mrs. VAN CLEVE. Not entirely. I mean as a matter of law, it has been held that when a Federal grant is made, the funds involved become local money. They lose their Federal character.

To the extent that the Congress has directed that these once-Federal funds will be spent in a certain way, of course, the territory is required to spend them in that particular way. But at the same time, the funds themselves have the status of non-Federal funds once granted over.

Senator McCLURE. If we're reducing from a 90/10 to a 75/25, was that based upon an assessment of local capability?

Mrs. VAN CLEVE. Not a careful assessment.

Senator McCLURE. If the 75-percent figure is a budget decision rather than a realistic assessment of the local capabilities, why didn't you choose to eliminate some projects and maintain the same level of Federal commitment?

Mrs. VAN CLEVE. Because we're persuaded, and I think the territorial governments whom we serve are also persuaded, that all of the projects in the budget justifications before you are important. They hope to achieve funding of all of them. They hope to be able to find sufficient local revenues to produce the match. If that does not occur, then, of course, reprogramings, with the consent of this committee, will necessarily follow. But it remains our hope that the projects can be carried out on this harder formula basis.

Senator McCLURE. If, for instance, in the trust territory, the Federal funds are 91 percent of the total, where in the world are they going to find the money to come up with an additional 15 percent?

Mrs. VAN CLEVE. The formula does not apply to the trust territory; it applies only to the territories and not, in fact, to all of them—the Virgin Islands' formula remains 90/10, since that's an ongoing project. The Northern Marianas construction is not subject to the formula because those funds come via the covenant, which does not provide for any such formula.

So accordingly, the 75/25 match really is proposed for application in 1982 only in the case of Guam and American Samoa.

Senator McCLURE. All right. In American Samoa, 88 percent Federal revenue. Where are they going to find 15 percent additional? Where are they going to find the money for the additional 15 percent?

Mrs. VAN CLEVE. Included in your figure is the revenue in American Samoa derived from its own income tax, locally imposed, locally collected, and locally retained. If that figure is excluded, American Samoa's reliance upon the Federal Government for fiscal 1982 is, by our figuring, 67 percent. That means that they anticipate—and our figures are speculative, as obviously budget estimates always are, or revenue estimates always are—but our expectation is that American Samoa will have about $20 million of its own revenues in fiscal year 1982. And it's our hope and expectation that the match can be derived from that source.

Senator McCLURE. Presumably, since we appropriate money to the territories for government operations, we're appropriating what is necessary for their governmental operations. Then we turn around and say, out of that that we have appropriated for government operations, you must come up with additional matching.

Why don't we just say we're reducing the amount that we're appropriating to them for government operations, and maintain the capital account?

Mrs. VAN CLEVE. Clearly, that could evoke the same fiscal result, if it were done with the care that you just implied.

I think the merit of proceeding in the fashion here proposed is that the territorial governments, American Samoa and Guam, and to an extent the Virgin Islands, will be required to recognize that they are making a contribution from funds over which they have discretion toward the construction of projects that they say—and we agree—they greatly need.

I think it places on them a sense of responsibility. It should have the effect of placing a sense of responsibility upon the legislatures.

Senator McCLURE. Well, it forces them to make some choices.

Mrs. VAN CLEVE. That's correct.

Senator McCLURE. Are you committed to 75 percent Federal funding for each project in the Department's justification?

Mrs. VAN CLEVE. Only for fiscal year 1982 for projects in American Samoa and Guam. As I suggested, both Northern Marianas covenant grants and the trust territory do not have a matching requirement at this point.

GUAM PORT

Senator McCLURE. The Guam commercial port project is estimated at $4.1 million. The original Federal funding was $2.3 million from Interior and $1.5 million from EDA, for a total of $3.8 million. You are now proposing only $1.95 million. That's not 75 percent.

Does Guam have the capability of providing the remaining $2.15 million?

Mrs. VAN CLEVE. The only good answer I can give you is that we don't know. And I hope you will put that question to the Guam witnesses this afternoon. We have not yet had hard information that the EDA funds have been withdrawn. We have read stories to that effect in the Pacific press, and it is certainly a likelihood.

But as to your premise—we're not sure about that yet.

Senator McClure. That puzzles me a little. Who has control of the EDA money?

Mrs. Van Cleve. The Commerce Department.

Senator McClure. That is in this administration, isn't it?

Mrs. Van Cleve. It is, indeed.

Senator McClure. And you don't know what they are planning?

Mrs. Van Cleve. The fact is, I didn't read in the Guam newspapers until yesterday about the withdrawal of Guam funds for this particular project. And we have simply not pursued it. We will do so and supply information for the record.

[The information follows:]

Guam Port Container Yard Expansion Project

The Economic Development Administration (EDA) Seattle office has approved Guam's application for $1.5 million for the port container yard expansion as a backup project in fiscal year 1981. This means that if other projects scheduled for fiscal year 1981 funding fall out or are not finally approved and granted by EDA in this fiscal year, the Guam project may be picked up and the grant awarded. However, EDA officials in Washington have said that chances of this happening are slim. If the project is not picked up in fiscal year 1981, the award might be granted in the first quarter of fiscal year 1982. The Department has maintained regular communication with EDA's Seattle and Washington offices on this matter.

The Governor of Guam is considering submitting a reprograming request to shift other available construction funds to the higher priority container yard project.

GUAM'S FUNDING CAPABILITY

Senator McClure. And Commerce hasn't said anything to you about their plans?

Mrs. Van Cleve. It has not.

Senator McClure. Do they know that you are a part of the same government they are part of?

Mrs. Van Cleve. We attempt to do business with them as much as we are able. Yes, they do, sir.

Senator McClure. I sometimes wonder.

If Guam has the capability to provide over 50 percent of the funding for this project, why isn't 50 percent applied to all other projects?

Mrs. Van Cleve. Our theory, initially, was to apply the 75/25 ratio to this project, as to the others. That is to say, when the EDA money was excluded, the ultimate result was that Guam's contribution would be no higher than 25 percent of the total provided by Interior and Guam.

I'm simply not—I cannot speak to the question of Guam's ability to fund the equivalent of 50 percent, because we have not got information from the Governor on that subject. He would be the decisionmaker there.

Senator McClure. Are the bridge reconstruction projects also subject to the same uncertainty of funding from other sources?

Mrs. Van Cleve. I think not. There is a bridge reconstruction program under existing Federal law, but our expectation is that Guam would look to Interior Department funding for its project, rather than to that source, because our arithmetic suggests that its ability to obtain funds under the standard Federal program would not be sufficient. That is to say, there simply aren't enough dollars to do the job.

So Guam has sought funds from us, rather than under the existing grant program, since it can't do the job under the latter.

Senator McClure. Will there be 75/25 percent on that program?

Mrs. Van Cleve. That is expected. That is proposed.

Senator McClure. On the $4.3 million total.

Mrs. Van Cleve. That is correct.

Senator McClure. How about the $150,000 for crime labs?

Mrs. Van Cleve. That also is subject to the same 75/25 cost sharing formula.

ASSUMPTIONS OF COST SHARING FORMULA

Senator McClure. Can the Committee assume that the administration considers the local economic capabilities of Guam, Samoa, the Virgin Islands, and the Northern Marianas to be identical?

Mrs. Van Cleve. Indeed not. You should not so assume. We know they are not.

Senator McClure. Then why is a formula used? Of course, as you pointed out, it doesn't apply to the Northern Marianas, and you have indicated the Virgin Islands is not subject to that formula. So it applies to Guam and American Samoa.

Mrs. Van Cleve. That's correct. I should perhaps add, in the interests of clarity, that if and when the construction of the Northern Marianas hospital is funded—that is not proposed in this budget, but we expect that it will be in a later budget—we would anticipate that the same 75/25 ratio would apply to it, and we would assume the same with respect to any new projects that the administration seeks to fund for the Virgin Islands.

Senator McClure. I am a little puzzled. If as a matter of fact there is no assumption on the part of the administration that local economic conditions are the same, why do we stick to the same formula? Are we more concerned with meeting the needs, or are we more concerned with the formula?

Mrs. Van Cleve. I think I'd like to adhere to the rationale I provided a few minutes ago, the notion that the territorial governments will themselves be required to make choices, and to produce some portion of projects, of expensive projects, otherwise federally funded.

Senator McClure. That's a fine rationale. But if we recognize the economic conditions are different, why would the formula be identical? Because that does not leave to local governments the same degree of opportunity to make those local decisions.

Mrs. Van Cleve. I think that's right. To devise, however, a formula unique to each area, tailored to each area, would unquestionably be an extraordinarily difficult thing, particularly given the fact that each is as heavily reliant on the United States as the statistics that you earlier cited suggest.

I think the 75/25 ratio appears to the administration to be essentially more even-handed, just as the kind of formulae imposed under other grant programs for the States, equally uneven, seem even-handed, because they are the same with respect to all of them.

Senator McClure. Is the economic disparity between the several States in the United States greater or less than the economic differences between the territories?

Mrs. Van Cleve. I certainly don't have any figures at the top of my head with which to answer that question.

I would think the difference, however, between California and Mississippi is probably greater than the difference between the most properous territory, perhaps the Virgin Islands, and the least prosperous, perhaps Micronesia—not a U.S. territory, and I don't mean to imply it.

Senator McClure. I understand that.

We have difficulties, however. It seems to me it is very difficult to rationalize the idea that an arbitrary formula, a formula that is applied rigidly to all of the varying circumstances in these various territories, can achieve anything like our responsibility. I certainly agree that local governments ought to have some stake in what is done. They ought to have some opportunity to make choices between levels of government operations and the capital construction program. I think that's a good tradeoff. I think it's one in which they ought to be involved as well as we are.

But I don't think that you can simply force each one of these into the same mold because of administrative convenience for us.

Mrs. Van Cleve. I appreciate your concern. I think I have said as much as I can to justify the formula.

REDUCTION IN OTHER FEDERAL PROGRAMS

Senator McClure. I will make a comment on that. I suspect that may be true. What is the total level of funding reduction proposed by other governmental agencies that would have gone to the territories?

Mrs. Van Cleve. Again, we do not have useful information to provide in response to that question. Each of the territories has attempted to make estimates, and I believe each will provide you with figures when they testify this afternoon. They did so in the House, largely in terms of the numbers of jobs that would be lost in the territorial governments.

It is, of course, an extraordinarily speculative undertaking, as you recognize, since we don't yet know the level of funding, particularly in Federal grant programs.

Senator McClure. I understand that, and I understand that we don't want to ask you to do unnecessary things either. You could make a first attempt based upon budget submissions. You could make a second attempt based upon actions taken to date on the conference report on the supplemental rescission package. You could make another attempt following actions based upon the 1982 budget submission and another attempt based on the congressional reaction to that.

So I understand we might ask you to do a great deal more work than is fruitful, in terms of the final result. But some interim effort is helpful to us in responding to those pressures to act on the 1982 budget request and the congressional actions that will follow, with respect to that request.

The 1981 rescissions and supplemental package is now virtually complete, so it is probably too late to have much effect on that package. But it could have some impact upon the decisions made in the 1982 budget, if we have that information. So it is with that in mind that I would ask if you might provide for the record, a list of the total funding reductions proposed for governmental agencies under the 1982 budget request, if you can do that. Provide for the record and include in that submission the answers to these following questions.

Was Interior involved in the decisions, and what was your position with respect to those decisions? What proposals do you have to cover the objectives of each of these reductions? In other words, if there is a reduction that reduced the capability, what proposal do you have to make—how do you propose that we will meet those objectives? Were the territorial governments involved in the decisions and were they consulted with respect to those reductions?

If you will do that for the record, please.

Mrs. VAN CLEVE. We will be pleased to do that.

[The information follows:]

FEDERAL GRANT REDUCTIONS

A list of total funding reductions proposed for governmental agencies under the fiscal year 1982 budget is not yet available. It will be furnished to the committee when it is.

Interior was not involved in the decisions to cut back on grant programs in any other Federal agencies. These decisions were made by the respective agencies, in consultation with OMB.

We currently have no proposals at this time to cover the objectives of the reductions in the territories.

The territories were not consulted or involved in the decisions.

BUDGET FOR THE OFFICE OF ASSISTANT SECRETARY

Senator McCLURE. I notice the budget does not include funds for the Office of Assistant Secretary. How do you propose to pay the salary?

Mrs. VAN CLEVE. We don't yet know for sure. The reason that the budget does not contain funds for the Assistant Secretary and the Deputy Assistant Secretaries is that the decision had not been made by Secretary Watt as to whether those positions would be perpetuated at the time that this budget went forward.

It may be necessary for us to seek a reprograming. We are mindful of the problem that you have identified, and we simply don't yet know how to do it.

Senator McCLURE. Do you have any idea of the total amount of salaries, the deputy salaries, clerical, travel, and administrative expenses associated with that office?

Mrs. VAN CLEVE. Mr. Gallagher can respond to that.

Mr. GALLAGHER. Yes, Mr. Chairman. It would be roughly—the seven positions would be the Assistant Secretary, two deputies, three secretaries, and then a staff assistant—approximately—our original figures were about $600,000.

Senator MCCLURE. $600,000? Is that on the basis of original estimates?

Mr. GALLAGHER. Yes.

Senator MCCLURE. Or on the basis of reduced estimates?

Mr. GALLAGHER. No; this is not a reduced estimate.

Senator MCCLURE. $600,000?

Mr. GALLAGHER. Yes, sir.

Senator MCCLURE. And you are suggesting we'll find a reprograming for the $600,000?

Mr. GALLAGHER. Once the Assistant Secretary is established, we are going to have to find the money.

Senator MCCLURE. Will that reprograming come from within this portion of the budget, or within Interior generally?

Mr. GALLAGHER. I suspect it will come from our portion of the budget.

Senator MCCLURE. Do you have any idea where that's going to come from? Are we going to change this 75/25 to 70/30?

Mr. GALLAGHER. No; I don't think it will come from the territorial budget request. It will probably be a reprograming from the Comptrollers offices.

Senator MCCLURE. From the Comptrollers office, one of the weakest operations we have you're going to weaken further?

Mr. GALLAGHER. Unless the Department can find other resources within the budget, that is the only source I would have for reprograming.

TREASURY DEPARTMENT ADMINISTRATION OF TAX COLLECTIONS

Senator MCCLURE. The original Treasury budget contained funds to provide for Federal administration of the local territorial tax systems in the territories. Are the funds still in the budget?

Mrs. VAN CLEVE. No; they are not, Mr. Chairman.

Senator MCCLURE. So that the administration of the territorial tax systems will be found by the local governments?

Mrs. VAN CLEVE. It will continue to be the responsibility of the local governments. The major questions to which your question is directed is one that has not been resolved yet by this administration, but it is certainly on the agenda.

Senator MCCLURE. When do you expect it will be resolved?

Mrs. VAN CLEVE. I hesitate to give a date, because there are strong views in various parts of the executive branch, and that means that it could take a considerable time to resolve.

Senator MCCLURE. So you can't answer as to whether or not you will be submitting legislation?

Mrs. VAN CLEVE. I cannot answer that question because it is a major issue in our area that is not alone for the Interior Department to decide. I could guarantee an early Interior Department decision, but because the Office of Management and Budget and Treasury will play a very important role, and since we clearly have no control over their time schedules, I would be unwise to give you any commitment as to time. It is an important decision and it will be very close to the top of the agenda of the new Assistant Secretary.

EFFECT OF FEDERAL TAX REDUCTION

Senator McCLURE. As you know, there are various proposals both within the administration and being considered in the Congress, for reduction in the level of taxation. What will the impact of such reduced taxation have on the revenues of Guam, the Virgin Islands, and American Samoa?

Mrs. VAN CLEVE. Substantial and pronounced. Beyond that, again, dollar figures are clearly not available until we know the gist of the tax reduction that is effected nationally. But the territories will suffer at least as much from a loss of revenue as other jurisdictions that administer the Federal income tax are affected by it.

Senator McCLURE. Do you have figures based on the administration's tax proposals?

Mrs. VAN CLEVE. We do not, but we probably could obtain them and supply them for the record.

Senator McCLURE. Would you do so, please?

Mrs. VAN CLEVE. We would be glad to do so.

[The information follows:]

EFFECT OF TAX PROPOSALS

Accurate figures are not available to show the effect of the administration's latest income tax proposal on the revenues of the territories. The computation is complicated due to the need to have information on tax collections for all income brackets from each territory. However, based on the best information available Guam estimates $10 million in reduced revenues for fiscal year 1982, the Virgin Islands estimates $14 million, and American Samoa $3 million.

TAX REDUCTION MEASURES

Senator McCLURE. Should we do something? Do we have a responsibility to attempt to alleviate the impact upon the territories. Or is that something, again, that they will be called upon to share, just as every other government shares?

Mrs. VAN CLEVE. Again, this administration has not come to terms with that particular issue. As I know you are aware, in the face of tax reduction measures in the mid-1970's, the Congress appropriated, in effect, the difference by way of grants to the territories. Whether the administration would be disposed to take that position at this time, I, first, don't know, but second would doubt, because it would represent clearly an appropriation of new money. But that is a prediction and not a statement of administration policy.

The administration has observed that the territories have the legal authority themselves to make up the difference by enacting surcharge taxes. They have been expressly authorized to do so. Of course, we are realistic enough to recognize that territorial legislatures are no more enthusiastic about passing revenue measures than are other legislative bodies.

But I point out that that is one way of meeting the problem, and we would certainly not want it overlooked.

TECHNICAL ASSISTANCE

Senator McCLURE. What effort is the Department undertaking to provide technical assistance and training, especially in financial management and maintenance training?

Mrs. VAN CLEVE. A very considerable, and we think rather successful effort, and I am going to ask Mr. Novick, who is responsible for our technical assistance operations, to elaborate on that question.

Mr. NOVICK. Mr. Chairman, our technical—our staff in the territories that provides technical assistance consists of primarily financial managers and EDP experts. We have at the present time nine people in Saipan and in the rest of Micronesia, one person in Guam and two people in the Virgin Islands. They are providing day to day supervision over the finance and administration of those offices.

We have also gone into the installation and design of accounting systems for the Virgin Islands, for the Northern Marianas, and for Saipan in particular. Guam's system has been automated and is in operation now. We have a person stationed in Ponape and a person stationed in Truk, each of whom are there to help to train and to oversee the operation.

Senator McCLURE. You have indicated there are nine in Saipan?

Mr. NOVICK. Yes, sir.

Senator McCLURE. Is that temporary startup at the level of assistance, or is that going to be a relatively permanent level?

Mr. NOVICK. It's not a permanent assignment. These depend on the work requested by the Governors, or by the High Commissioner, in each location. In the case of these nine, they are clearly involved primarily with financial accounting systems and documentation of accounting data for the trust territory. They will be transferred. We expect to move two people full-time into the finance office of the Northern Marianas. We expect to retain four in the trust territory, and move two to Guam and one to American Samoa.

It depends, sir, strictly on the requirements and the time it takes to complete those assignments.

Senator McCLURE. Thank you.

Have you met the requests of the local governments involved in each instance, or is this a partial response to their requests?

Mr. NOVICK. I'd like to address each one in particular. In the Virgin Islands in 1978, the Governor requested that we do a survey of his accounting system, identify the problems that he has, come to an agreement with him to develop a joint effort both financial and resourcewise, to improve that accounting system.

We completed the survey. We know what needs to be done to correct the system. The Governor is now prepared, I understand, to request that we proceed on with the complete renovation and changes required to improve the system in the Virgin Islands.

We have completed several modules. There are certain aspects of the V.I. system that have been improved. We reconciled all their cash accounts. We helped them improve their payroll systems, we've done those sorts of things, but they are modular. They are not the overall system improvement that we are looking to, and we would like to start that very soon. It depends now upon an agreement to be reached subsequently between the new Assistant Secretary for Territories and the Governor, on how we proceed. The questions remain as to how we fund it and how many people each of us provides.

We need to have a commitment from the Governor in order to assure you that the money is well spent. In the case of the Northern Marianas, the Governor had requested that we first design and install a manual accounting system, and that has been running for 2 years. We have assigned one technical assistance person to his staff, and she has been working in that office for 2 years, to help supervise and train the people.

Last fall the Governor asked that we automate that system, and that has been completed. We did that with in-house people at no additional contract costs, and in that sense that's how we mobilized our forces and that's why we have them there now in Saipan.

In Guam in 1978 the Governor requested us to come in and centralize his 12 separate accounting systems and to automate them in some fashion. We did the survey, we assigned staff. We're still there. We've completed the automation. It's now in operation. It's been successful in that after 1 year of operation, the Governor is taking full credit for an outstanding information system. I think that technical assistance in the territorial area, has come a long way, but we've got a long way to go.

Senator McClure. You indicated you have several one place, one in another place, one in another place, and so on. Is that level adequate to respond to the requests by local governments?

Mr. Novick. It is, sir, if we use the concept that we are exploring of contracting for those services which we can't provide in-house. We'd like to maintain a lean staff in-house, keep them mobile, and use consultants or contract personnel as required.

Senator McClure. You believe you've been able to respond fully to the requests of local government in this area?

Mr. Novick. There have been instances where we have not been able to respond, sir. We have not been able to.

Senator McClure. And how large a magnitude is that? Can you identify the areas where you have not been able to respond?

Mr. Novick. We've been able to respond to American Samoa by using people on a temporary basis, instead of technical assistance. We have not been able to respond to a request specifically raised, mostly verbally, by the States of Micronesia, by the Federated States, by Palau and by the Marshalls, simply because of the distance and the fact that we have no money authorized or appropriated for technical assistance.

Senator McCLURE. How much technical assistance have they requested in that manner?

Mr. NOVICK. The Federated States of Micronesia have requested every type of assistance imaginable, down to helping them to staff their government operations, design their accounting functions and do the work for them. It's just a tremendous effort which we would like to begin to do.

Senator McCLURE. Do you have any estimate of what the cost would be to respond to that request fully?

Mr. NOVICK. I would be happy to provide it for the record. I do have the documentation that I could put together.

Senator McCLURE. Would you do so, please?

Mr. NOVICK. Yes.

[The information follows:]

FSM TECHNICAL ASSISTANCE

The President of the Federated States of Micronesia requested that the Office of Territorial and International Affairs conduct a comprehensive survey to determine which automated financial management system would be appropriate for the headquarters and the four states' finance and accounting operations once the TTPI has been terminated. We estimate that this survey will cost $150,000.

The President requested also that we provide a technical assistance advisor whose duties would include the development of an effective budget formulation and program execution system. This assistance will cost approximately $50,000 per year.

FEDERAL LAWS COMMISSION

Senator McCLURE. The revised budget removed $1 million for a Federal laws commission. Are you familiar with the position taken by the Energy Committee last year on the proposed commission?

Mrs. VAN CLEVE. We are, Mr. Chairman.

Senator McCLURE. Do you agree a comprehensive review of Federal laws, rules and regulations is necessary?

Mrs. VAN CLEVE. I think there is agreement both within the executive branch and the territories on that subject, sir.

Senator McCLURE. If you remove the money, how do you propose undertaking the review?

Mrs. VAN CLEVE. The current hope is that the review can be done initially within the Interior Department, following that, suitable consultation between Interior representatives and the territorial governments would occur. The hope is that the analysis of Federal laws can be done in our Solicitor's Office on a disciplined, title by title, section by section basis, reviewing all parts of the United States Code.

Senator McCLURE. Do you think you'll be able to do it in-house?

Mrs. VAN CLEVE. That is the hope, sir.

Senator McCLURE. Is that the expectation?

Mrs. VAN CLEVE. It happens to be my expectation, because the witness before you hopes to do just that.

Senator McCLURE. All right. I hear a lot of hopes around here. Sometimes the expectation is different.

Mrs. VAN CLEVE. Well, this particular arrangement has not fallen into place in terms of all details, but I believe there is agreement at very high levels in the Secretary's office that the job will be done.

Senator McClure. Let me turn now to the trust territory, in order that I might get from the Navy their position as well and not hold them here all morning, while we talk about other things that are not relevant to the Navy's responsibility.

Recently you submitted a report on the construction program undertaken by Navy OICC. The report identified 18 projects which were reduced in scope from the original design and indicated the need of $73 million to restore the projects to original design, plus $8 million for future construction. Of this figure, you indicate that $47 million is not necessary, since the final scoping is inadequate.

Do you plan to request the $34 million which you seem to agree would be needed?

Mr. Smith. Mr. Chairman, I believe the report, as I recall, addressed some 33 to 34 million dollars' worth of work that was being further analyzed, and if the decision was reached within the Department of the Interior, they would pursue funding for that on those portions of projects that they desired in fiscal year 1983. It is, as you know, Interior's program. We are the designing construction agent for them, and we will make engineering recommendations to them.

Senator McClure. Could you respond with respect to Interior's position on rescoping?

Mrs. Van Cleve. Our position at the moment is that we are looking hard at all of those 34 million dollars' worth of projects, and they will be included in upcoming budgets to the extent that the Interior Department and the administration conclude that they ought to be. We do not seek those funds at this time and have not advanced the study far enough to be able to tell you how many are likely to be included in subsequent years.

Senator McClure. If, as a matter of fact, you can make that study and make a determination that some or all of that money is needed, would it be your intention to ask for a reprograming, a supplemental, or simply defer it to later years?

Mrs. Van Cleve. The greatest likelihood is that it would be a fiscal 1983 request, a regular budget request for the fiscal year 1983.

Senator McClure. How long have these programs been under evaluation and under review, and under one form of process or another?

Mrs. Van Cleve. I think we have really not identified the projects that might require further funding until the very late weeks of calendar year 1980 and the months that have followed. It's really a product of the review that you asked us to conduct.

Senator McClure. The reason I ask that question is rather obvious. The capital needs for the trust territory are very great, and many of them go back many, many years.

Mrs. Van Cleve. With respect to the major CIP program that we're now discussing, we testified a year ago that we believed the funds that we sought for fiscal year 1981 would be sufficient to complete the program. That was then the best information that the Navy was able to give us, and the record will show that we so testified. It was not until very recently, and I think it was in December 1980, that the OICC people in Guam advised the then High Commissioner that there were going to be further needs not yet met.

QUALITY REVIEW OF TRUST TERRITORY CONSTRUCTION

Senator McCLURE. The report as requested considered only those projects undertaken by Navy OICC and addressed only changes in scoping. Subsequently, I requested a comprehensive quality review of the entire construction program to determine whether each project is performing to reasonable expectations, what rehabilitation needs to be done and what the out-year maintenance and operation costs will be.

How soon will that review be completed?

Mrs. VAN CLEVE. We believe that it can be accomplished in about 2 months. It will take another district by district review, but we believe we know who should do it and how it can be done, and that's by Mr. Solomon, and he sits in this room.

Senator McCLURE. And that should be done in 2 months. Is that just the field work, or is that the completion of the report?

Mrs. VAN CLEVE. The field work and the preparation of the report would take approximately 2 months. We would need to add to that the clearance process which, as you know, is sometimes protracted.

Senator McCLURE. Well, when might I expect to receive the information?

Mrs. VAN CLEVE. Our experience would suggest——

Senator McCLURE. Other than having it slipped to me under the table by someone?

Mrs. VAN CLEVE. Our experience would suggest that a clearance could take approximately 1 month. It should not take longer. It is unlikely to take much less.

Senator McCLURE. So something on the order of 3 months from now?

Mrs. VAN CLEVE. I'm going to ask Mr. Solomon to nod his head, if that's fair. Three months.

Senator McCLURE. That's a good estimate. A good, hard estimate. [Laughter.]

All right. Three months. What's that date? [Laughter.]

We will be coming back right after Labor Day, and I hope to have it on my desk when we come back.

Mrs. VAN CLEVE. We will do our best, Mr. Chairman.

Senator McCLURE. Can you provide this committee and the Energy and Natural Resources Committee with interim reports as they are completed, either by the district or by project?

Mrs. VAN CLEVE. I feel sure we can do that.

Senator McCLURE. It would be extremely helpful to us in trying to evaluate what we can do and need to do, and I would invite you, if you can, in that process to identify the most critical areas. I'm not suggesting that I would expect that the interim reporting would necessarily be in the order of priority, but the earlier we can get to the most critical considerations, the better off we all will be.

Mrs. VAN CLEVE. I believe we can do that, Mr. Chairman.

REPORT ON MAINTENANCE NEEDS FOR THE TRUST TERRITORY

Senator MCCLURE. Recently a report was completed on the maintenance needs of the trust territory. The report indicates on page 2 that the public works budget for the three entities needs to be increased by $8.9 million in fiscal year 1982 and similar amounts in fiscal years 1983 and 1984. The report indicates a need to hire at least 79 additional skilled personnel and 269 local hires.

Have you included these figures in your budget request?

Mrs. VAN CLEVE. We have not.

Senator MCCLURE. Do you support the appropriation of that amount?

Mrs. VAN CLEVE. The administration is not able to expand the budget request that lies before you.

Senator MCCLURE. What would be the effect if the level is attained?

Mrs. VAN CLEVE. I'm going to ask Mr. Solomon to comment further, because, again, he's the architect of that particular report, but the effect of reduced—of lesser—maintenance funds is, of course, that the projects will not be kept up in the fashion that we would all prefer. If Mr. Solomon can speak further to this point, I'd be pleased to have him do so.

Mr. SOLOMON. Yes, Mr. Chairman. We do have some funds in the 1982 budget that are going to be available for operation and maintenance, and that is a total of $3 million that could be applied by each of the entities to operation and maintenance problems.

Senator MCCLURE. Three million dollars?

Mr. SOLOMON. Three million dollars, sir.

Senator MCCLURE. As contrasted with the increased need of $8.9 million?

Mr. SOLOMON. That's true, Mr. Chairman. The report, if I may point out, was directed to each of the three entities, to the Presidents of those respective governments, to show what areas they needed improvement in, and hopefully, they will be able to look at their own organization and their own user charges and tax rates, and try to come up with additional funds to help supplement the $3 million that's been provided in the 1982 budget.

Senator MCCLURE. As I read the report, at the response to the request, the team was formed to make the review. My team consisted of specialists from TTI—TTG, the Corps of Engineers in Honolulu, and the Navy Pacific Engineering Command from Honolulu. The task force was under—or the team was under the guidance of a staff member from Territorial and International Affairs; am I correct in the composition of the team?

Mr. SOLOMON. Yes, sir.

Senator MCCLURE. Did all members of the team concur in the estimate of $8,876,200?

Mr. SOLOMON. Yes, Mr. Chairman. It was based on their figures. Each one of the specialists had a distinct area to work in. They went in and looked at, for instance, maintenance, looked at powerplants, water and sewage, and based on their review and discussions with the local people, they came up with an estimate of manpower staffing and equipment needed.

Senator McClure. I hope the Navy considered rainfall and the local conditions when they did that.

I'm concerned, if we identify the need at some $12 million, nearly $13 million a year, and we provide $3 million, that we don't have anything further to say, other than the fact, yes, we need it. We're going to ask local governments to come up with the additional.

Why should we agree to provide new construction, if you oppose the necessary funds to maintain the existing infrastructure?

Mrs. Van Cleve. It's an almost impossible question to answer. Maintenance has always been a problem that has plagued the territorial governments and plagued the Federal Government, as they deal with territorial governments. We are seeking funds for new projects, when we feel that the projects are vitally necessary. What we were trying to do that's different and better now than what we have done in the past, is to identify maintenance requirements and convey the need to the entity involved, particularly now, I'm speaking, of course, of the trust territory entities, in a way that we have not done before. That operations and maintenance report that you are referring to, that Mr. Solomon was engaged in creating, does, I think, convey to the local governments what it is they have to do to keep these, in most instances, splendid capital improvements from falling apart. I think they will know better in the future than they have known in the past.

Senator McClure. I read from the cover letter of the transmittal to me of the report. It says, in part, that the prolonged life of each of these capital improvement projects is dependent upon proper operation and maintenance. And we are allowing the existing capital stock to deteriorate, and instead you won't ask for additional money to do what is the very center of that report, the very reason for its existence. Then you ask us to put millions of dollars into new capital construction. Doesn't good management start with the maintenance of what we have?

Mrs. Van Cleve. Of course it does. No question about it.

Senator McClure. Do you feel that the conclusions of the report are not accurate?

Mrs. Van Cleve. No; we do not differ from those conclusions.

Senator McClure. So in spite of the fact that the report is accurate and the conclusion is correct, the direction is proper, we're not going to follow it?

Mrs. Van Cleve. We are not able to ask you for further funds, that's the problem.

Senator McClure. I understand. That's one of the frustrations we in the Congress have. The people who make the decisions don't necessarily come before the committees of the Congress, and we have to rely upon informal consultations with Mr. Stockman and his people. That's a fatal weakness in the Federal structure, in my judgment, incidentally. And that's one of the reasons we have troubles. Sometime we will get around to that. I have great respect for Mr. Stockman, as I have had for his predecessors, but I really believe we would be better off to abolish OMB, fire everybody, and start all over.

Mrs. VAN CLEVE. You would have quite a few votes from this room.

Senator MCCLURE. Well, I hope Mr. Stockman and some of his people hear that as well, and I know the next report we'll get will be a recommendation to cut legislative support. [Laughter.]

The report notes that many projects, notably water and sewage, require additional funding from other agencies, such as EPA, to complete the systems, and unless the systems are completed, the projects will not work adequately, due to lack of sufficient hookups. With the cuts in funding from these other agencies, do you plan to make up the difference?

Mrs. VAN CLEVE. Following consultation with my colleagues, I think the answer to your question is that we are not in position to seek funds to fill such gaps as may arise, and there may be gaps.

Senator MCCLURE. What is the future of these basic services then? If you can't fill the gaps, we'll have a sewage treatment plant or no sewers, or conversely, we'll have some sewers and no treatment plant? We'll have a water conditioning plant but no water?

Mr. SOLOMON. Mr. Chairman, I might point out that we really didn't assess the full impact of all these cuts yet, and now the Acting Deputy High Commissioner is reviewing this entire area, and getting the information available to take a look at exactly what programs will be impacted and to what degree. Our most immediate thing will be to look at reprograming to try to complete the necessary projects to keep them going and finish up.

Senator MCCLURE. Reprograming from where?

Mr. SOLOMON. From other available funds in the construction program.

Senator MCCLURE. What are the other available funds?

Mr. SOLOMON. There are, as the Navy pointed out, $72 million that have not yet been committed. Although identified for specific projects, they have not yet been awarded. We could theoretically tap into that money to move it to complete the ongoing projects.

Senator MCCLURE. Assuming those projects are not essential.

Mr. SOLOMON. Making decisions based on completing an ongoing project, rather than starting a new project.

Senator MCCLURE. Could you provide for us a priority list of the projects? Are you far enough along in your evaluation to be able to do that?

Mr. SOLOMON. No, Mr. Chairman, we just started the project. The Acting High Commissioner just returned a few days ago. He is going to start working on this. This will be in conjunction with your request for a comprehensive followup review.

REDUCTIONS IN OTHER FEDERAL PROGRAMS

Senator MCCLURE. There was an election last November 4. We didn't know exactly what was going to happen with the new administration which came in in January. New budget requests came in January from the old administration. New budget requests started flowing up in March under the new administration. We're now in the first of June and we still haven't even begun to look at the impact of those budget requests.

That seems to me to be an awfully myopic approach, in which you have looked only at your budget, without looking at the effects of the other budget, even though we're months into this fiscal year. You know, there are only a few months left in fiscal 1981 and we're 2 weeks away from the work on the fiscal 1982 budget. And yet we haven't yet looked, apparently, at the cost effects. What happens with other Federal programs reductions, as it impacts upon territorial administration.

You've looked at your own budget, but a large part of the expenditures have come in through other budgets, and you haven't yet looked at those effects. That seems incredible to me, very honestly. I know it's difficult. It's hard to get the figures. Goodness knows, we have enough difficulty. But somebody, somewhere certainly has been looking at those figures and those effects. We are flailing around in a vacuum of information.

I can point to obvious deficiencies, but I don't know, and don't have the access to the information, unless you provide it. Unless you have looked at these other programs, how are we to look at the effects? And yet we're making budgetary decisions. I can imagine that you are frustrated. I hope you can imagine how frustrated we get. But how about the people at the end of the delivery system?

Mrs. VAN CLEVE. I have no reasonable defense to offer. I can say that our efforts to obtain figures with respect to reduced Interior grants from our own departmental programs took a matter of something like 6 weeks, and the answers we got were so qualified in the absence of anything like final action on them, that we found them very hard to work with. We are frustrated because the sources of information are simply disparate, and, as I say, so equivocating, that it's very hard to make judgments.

But as I said earlier, we will do our best to collect the information that I earlier said we'd provide for the record, and we will do our best.

Senator MCCLURE. Were you consulted in the decisions to suspend funding under these other programs?

Mrs. VAN CLEVE. So far as I know, not at all. These were decisions that were made in a great hurry by the granting agencies in cooperation with the Office of Management and Budget. And I think that the constraints of time foreclosed the kind of consultation that everybody could agree should have occurred.

POWER GENERATION NEEDS

Senator MCCLURE. What are the present power generation needs of each area?

Mrs. VAN CLEVE. Various people among my colleagues can speak to this issue and I think the territorial governments can probably do so more effectively than we.

Senator McClure. I hope you know as much about their needs as they do.

Mrs. Van Cleve. Well, we don't purport to be as informed as the territorial goverments on the subject.

Senator McClure. But they have been informing you periodically, have they not?

Mrs. Van Cleve. Oh, indeed they have. We are in constant contact on this subject. I just mean that we have probably not extracted 100 percent of the data that is appropriate.

Mr. Novick can speak to Guam, Mr. Gallagher can speak to American Samoa. Mr. Novick can also speak to the Virgin Islands, and I would ask them to do that if that's agreeable.

Would you begin with American Samoa, Hugh?

Senator McClure. In responding, rather than go back through a list of questions territory by territory, area by area, let me ask you to respond to each of these questions as you go through:

What are the power generation needs; how is the power presently supplied; what is the condition of the facilities, including transmission; what is the installed capacity; and what are the average and peak loads?

Mr. Gallagher. Mr. Chairman, for all of the territories we have probably most of that information, but not all of it. In fact, in the case of the Northern Marianas, we just went out to get additional information on their power problems.

Senator McClure. Maybe more constructively, in view of the time constraints this morning, I would ask you to provide that for the record for each of the areas involved.

Mr. Gallagher. Yes, sir.

Senator McClure. And I'll repeat the request:

What are the present power generation needs; how is the power supplied; what is the condition of the facilities, including transmission; what is the installed capacity; what are the average and peak loads; what is the cost of power generation; and what is the billing rate; how is the difference between the two financed; and how does private versus public consumption compare?

I might add to that, what percentage of each district's operations budget goes to fuel; and perhaps you could answer for the record today, what is the present status for the Mobil contract to provide fuel?

Mrs. Van Cleve. We'll be glad to provide all of that information for the record, Mr. Chairman.

Perhaps it would be useful for me simply to observe at this point that most of the territories have fairly severe power problems. That is true in many parts of the trust territory; it is true in American Samoa, it is true in the Virgin Islands.

At the moment Guam and Northern Marianas are in respectable shape from the power standpoint. That is to say, they have sufficient facilities.

Senator McClure. What you are indicating is the others are not in respectable shape?

Mrs. VAN CLEVE. Quite correct.

[The information follows:]

POWER GENERATION IN THE TERRITORIES

Details concerning the power generation needs in the individual territories, that is, how is the power presently supplied; and what is the condition of the facilities; together with costs and other data on power is provided in the answers to the additional committee questions for each of the territories contained in this record.

MOBIL CONTRACT STATUS

Senator MCCLURE. What is the present status of the Mobil contract to provide fuel?

Mrs. VAN CLEVE. I think undecided, but Mr. Solomon knows more of this than I do.

Mr. SOLOMON. That's correct, sir. It is undecided at this time. The three entities and the Northern Marianas met with Mobil Oil a few weeks ago in Guam, but there has been no final resolution on what course of action they will take.

Senator MCCLURE. When do you expect to have an answer?

Mr. SOLOMON. It will have to be fairly—it will have to be quickly, because I believe the contract with Mobil expires in the near future.

Senator MCCLURE. How near?

Mr. GALLAGHER. I think by the end of June.

Senator MCCLURE. The end of this month, or in this month?

Mr. SOLOMON. The end, sir.

Senator MCCLURE. Do you have any plans to meet emergency situations in the event the Mobil contract is not renewed?

You would have an emergency, wouldn't you?

Mr. SOLOMON. We would, sir. It is more or less an entity decision. The three entities are dealing with Mobil Oil, and we have been a participant, through the Acting High Commissioner, but not a final decisionmaker in the process. They will make the final decision with Mobil.

We have pointed out the problems that they might incur in case they don't settle with Mobil—in the shortage of oil, and where are they going to get their supplies from.

Senator MCCLURE. Well, the closer we get to the date, the greater the emergency is, the less latitude they have in dealing with Mobil. I would hope we are concerned more with their welfare than we are with Mobil's.

Mr. SOLOMON. We definitely are, sir.

FUEL BUDGET FOR 1982

Senator MCCLURE. I'm sure you are, and I am sure the record would reflect that.

How much do you propose for fuel in fiscal year 1982?

Mrs. VAN CLEVE. I referred earlier to a fuel reserve of $2.5 million that will be held until needed.

Mr. Gallagher is our expert on that subject and can tell you more about the amounts otherwise included in the budget on that subject.

Mr. GALLAGHER. For the trust territory which you are speaking to, we have, including the fuel reserve and user charges that the entities will charge, a figure of $11.3 million for fuel.

Senator McCLURE. $11.3 million including the $2.5 million on reserve?

Mr. GALLAGHER. That's correct.

Senator McCLURE. So the basic figure would be $8.8 million?

Mr. GALLAGHER. $7.1 million in Interior funds, and $1.6 million in user charges.

Senator McCLURE. $7.1 and $1.6 million, a total of $8.7 or $8.8 million basic, plus the reserve?

Mr. GALLAGHER. That's correct.

Senator McCLURE. Was that figure determined by assuming a given consumption level?

Mr. GALLAGHER. Yes, sir, it was.

Senator McCLURE. If so, what is that level and how does it compare to fiscal year 1982 and fiscal year 1980?

Mr. GALLAGHER. We used a 6.3 million gallon consumption level. That is roughly a 10-percent increase over fiscal year 1981, 6.3 million gallons.

Senator McCLURE. Is that the same for 1981 and 1980?

Mr. GALLAGHER. A 10-percent increase over 1981.

Senator McCLURE. How much of an increase over 1980?

Mr. GALLAGHER. I would say about 20 percent.

Senator McCLURE. So you are figuring about a 10-percent-per-year increase in the number of gallons?

Mr. GALLAGHER. That's correct, sir, because new units were going on line.

Senator McCLURE. What will happen if the cost of fuel increases?

Mr. GALLAGHER. The $11.3 million figure that we have budgeted, at the 6.3 million gallons, can cover costs up to $1.71 a gallon current price.

Now it is roughly $1.33 a gallon. So we can cover—a 29-percent increase for 1982, and we feel that is a sufficient amount at this time.

Senator McCLURE. In the negotiations with Mobil, what has been the range of discussions?

Mr. GALLAGHER. I'm not aware what the discussions are, but in the Mobil contract, which is the second extension—Mobil is almost the sole source supplier in Micronesia—the price variance was really not a negotiable item in the contract. It was whatever the going rate was in the world market, or whatever Mobil could charge.

Really, the contract basically was that Mobil would supply the oil under certain conditions. The price of fuel in the contract fluctuates. It is not tied down to a specific amount.

So, right now Mobil is getting their—at least from what we understand—is buying their oil for the trust territory on the spot market out of Singapore.

Senator McCLURE. So they are trying to pass through the spot market costs?

Mr. GALLAGHER. Yes; that's what they've been doing.

Senator MCCLURE. That's a cushy deal.

Mr. GALLAGHER. Well, they are the only supplier there, so they can get away with it.

Senator MCCLURE. So they can charge whatever they want to charge?

Mr. GALLAGHER. That's correct.

Senator MCCLURE. Are we looking for alternatives?

Mr. GALLAGHER. On suppliers out there, it is very difficult. I don't know. Again, I have not been following that end of it.

Senator MCCLURE. Mobil has contract suppliers, don't they?

Mr. GALLAGHER. I would assume so.

Senator MCCLURE. Mobil isn't totally dependent upon the spot market, are they?

Mr. GALLAGHER. No.

Senator MCCLURE. Then why is the price to the trust territory based upon spot market prices?

Mr. GALLAGHER. Because I think they're using the refineries of Singapore; that's where they're buying it now, versus taking it from the West Coast. That's the closest market.

Senator MCCLURE. As long as they've got a cost-plus contract, they can keep on doing that, can't they?

Mr. GALLAGHER. Yes.

Senator MCCLURE. That doesn't sound like very good management to me, except from the standpoint of Mobil's management.

Mr. GALLAGHER. That's true.

FUEL COST PROJECTIONS

Senator MCCLURE. What is your projected fuel cost? You say you can accomodate up to $1.71 a gallon?

Mr. GALLAGHER. $1.71 a gallon.

Senator MCCLURE. Is that realistic?

Mr. GALLAGHER. We think so at this point in time. This is based on some of the Mobil projections.

Senator MCCLURE. You're using the fuel reserve to cover that amount?

Mr. GALLAGHER. That will cover everything—not over that. That will include the fuel reserve. But if it doesn't go to $1.71, then the fuel reserve can be used for other areas.

Senator MCCLURE. What is the projected cost if you don't use the fuel reserve?

Mr. GALLAGHER. I think about $1.50 a gallon.

Senator MCCLURE. It must be lower than that. The fuel reserve is almost one-quarter of the total. It's 20 percent of the total. I would think if you don't count the fuel reserve, it would be 20 percent—80 percent of the $1.71. That means——

Mr. GALLAGHER. Within the $1.40 range.

Senator MCCLURE. Your estimates are very close to present price.

Mr. GALLAGHER. Yes, pretty close.

Senator McClure. You don't estimate any price increase over the next year?

Mr. Gallagher. Well, the fuel reserve would be for the increase.

Senator McClure. So we are continuing the practice that we have had in the past of continuing crises, based upon escalating fuel costs with no estimate having been made sufficiently to cover those estimated fuel costs.

Mr. Gallagher. We did with the fuel reserve.

Senator McClure. You put the fuel reserve in as a means to cope with the unanticipated costs?

Mr. Gallagher. That's correct.

Senator McClure. Isn't it better budgeting to anticipate some fuel cost and build it into the budget rather than set up a reserve?

Mr. Gallagher. The entities to some degree have done that. But again, to cover that, to make sure, the decision was made to keep a fuel reserve versus putting the whole amount into the entities' budgets.

Senator McClure. It's a little like a family budgeting an emergency item that includes their basic food costs for the family. They know it's going to cost $200 a month or $250 to $300 a month, but they budget for less and then add in an emergency amount to cover it. That's not truly contingency planning, is it?

Mr. Gallagher. Not really.

Senator McClure. In other words, we're trying to kid ourselves with some budget entries.

How often in the past several years has a supplemental or reprograming been necessary for fuel costs?

Mr. Gallagher. Fiscal year 1981 was the first time we had to request a budget amendment to cover fuel costs for fiscal years 1980 and 1981.

Senator McClure. Just once?

Mr. Gallagher. Yes, sir.

MAJURO POWERPLANT FINANCING

Senator McClure. How is the new powerplant in Majuro being financed?

Mrs. Van Cleve. I can give you a short answer now, and we'll provide a more detailed one for the record.

[The information follows:]

It is the understanding of the Department of the Interior that the new 12-megawatt generating plant and a 6 million gallon fuel tank storage farm in Majuro is being financed by a $24,899,799 credit agreement between the Government of the Marshall Islands and the Midland Bank of London. The arrangements consist of a $21,253,629 loan from the bank, with a United Kingdom Government guarantee and a $3,646,170 Eurocurrency loan facility. The new powerplant will incorporate four low speed three MW Peilstick diesel generators which can operate on inexpensive Bunker C fuel rather than the more expensive light diesel. The Government of the Marshalls estimates that the new powerplant should result in a 65-percent savings over the current Marshall Islands Government fuel bill.

The bank loan is guaranteed by the export credit guarantee department of the United Kingdom Ministry of Trade. The United Kingdom Government fully understand from consultations with U.S. officials in London that the U.S. Government accepted no responsibility in connection with the financing of the project.

Additionally, the Marshall Islands Loan Act of 1979 (MIG—Public Law 1979-9) which applies to all borrowing by the Government of the Marshalls, specifically provides that "in no event shall the United States grant general fund, or any special United States grant funds, or any property of the Trust Territory of the Pacific Islands for the United States be security for such indebtedness," that is indebtedness incurred by the Marshall Islands Government.

FEDERAL GOVERNMENT INVOLVEMENT

Mrs. VAN CLEVE. In large measure, through a loan from a British bank, guaranteed by the Government of the United Kingdom. The loan is in the range of $24 million. There is a Marshall Islands Government contribution to the power project in the range of $400,000. There is no Federal Government guarantee of any sort with respect to this project; indeed, none was sought.

Senator MCCLURE. Mrs. Van Cleve, do you honestly believe that if they default on it, that the Federal Government will not be involved?

Mrs. VAN CLEVE. I have no doubt but that the Federal Government would be asked to be involved, but I'm quite clear that there has been no commitment, surely no legal commitment, and I think nothing approaching a moral commitment at this point, because we were surprised by the project; we did not know it was coming to pass.

Senator MCCLURE. I'm certain that that latter is correct. But should we have been surprised?

If, as a matter of fact, the terms of that contract cannot be met, there would be a failure in their ability to pay, what would be the recourse of the British bank?

Mrs. VAN CLEVE. That would, I guess, require knowledge of the basic instruments that I do not have. I'm confident that the British bank could not win in a court of law if it sought to recover from any Federal Government source.

Senator MCCLURE. What would they do? Go out and seize some coral?

Mrs. VAN CLEVE. Not likely, and I don't suppose a powerplant sitting in Majuro would be of great value if dismantled and brought back to the United Kingdom.

Senator MCCLURE. How is it that the entity can enter into such a contract without any knowledge of the administering authority?

Mrs. VAN CLEVE. It is possible, both as a theoretical matter and as a practical matter, given the degree of independence that the entities have achieved in recent years as a consequence of their new constitutions. The Marshall Islands Government, as you are doubtless aware, has a particular interest and a high degree of independence. Its communication with the High Commissioner is relatively slight, equally so with us.

Senator MCCLURE. What is the Comptroller's responsibility?

Mrs. VAN CLEVE. The Comptroller for Guam has responsibility for the trust territory and the Northern Marianas as well. It's his basic responsibility to do an annual report——

Senator MCCLURE. After the fact?

Mrs. VAN CLEVE. That's correct. A postaudit on the financial condition of the trust territory government. He also does on-the-spot audits for us when we ask him to and when his resources permit.

I think I'm correct that we did not know of the Marshall Islands powerplant matter, except through inquiries from local private lawyers who put questions to us about the nature of the Marshall Islands Government authority.

Senator McCLURE. So you knew something was going on.

Mrs. VAN CLEVE. Indeed. This was followed within a few days by newspaper articles in the Marshall Islands newspapers, making clear that the event had occurred.

Senator McCLURE. It was only a matter of a few days from the time inquiries were made until it had been completed?

Mrs. VAN CLEVE. My "few days" may be an exaggeration. I think Mr. DeYoung is our expert on that subject, and I would ask him to comment further. I may say, we had no official information from the Marshall Islands Government at any time on this subject.

Senator McCLURE. That could be true, but I won't probe further for official information. But sometimes you know things we don't know.

Mrs. VAN CLEVE. That's right. And Mr. DeYoung is good at knowing that sort of thing.

Senator McCLURE. That's what I would like to find out.

Mr. DEYOUNG. Yes; Mr. Chairman, the arrangement is one between the Marshall Islands Government and the Midland Bank of the United Kingdom. Now, we do not have all the details on how they are going to pay back the low-interest loan. It is over a considerable period of time, so it would be paid back in the period when the Marshall Islands Government presumably would have attained its status after the trusteeship is terminated.

At that particular point in time, the Marshall Islands Government will have resources form—presumably from the subsidy that would be coming from the U.S. Government under the compact, whatever that compact may be. They will have local resources of their own, which are already considerable. In the opinion, I think, of the Marshall Islands Government budget and finance people, they do not see a major problem of meeting the repayment and the interest, which will be over a considerable period of time.

I think, of course, the Marshall Islands Government officials, who will be here later today, can explain more in detail the precise arrangements.

Senator McCLURE. Well, certainly the Marshall Islands Government has greater independence under the constitution than they used to have. And the compact has not been completed, and the compact terms are not yet fully known; is that not correct?

Mrs. VAN CLEVE. That's correct.

Senator McCLURE. So I don't believe a bank is negotiating on the basis of what may be a compact term in the future, nor can we so easily say that financial obligations entered into under the current relationships between the Marshall Islands and the United States is wholly without impact or responsibility of the administrators of the Trust Territory of the Pacific Islands; is that not correct?

Mrs. VAN CLEVE. I think that's correct. But I would add that, so far as we are aware, there is no question but what the Marshall Islands Government did have the authority, without the consent of the High Commissioner, to enter into this agreement. I think it is within the terms of its constitutional powers.

MARSHALLS—JAPAN FISHING AGREEMENT

Senator MCCLURE. How about the fisheries arrangement with Japan?

Mrs. VAN CLEVE. I have no reason to doubt that the Marshall Islands Government is acting within the scope of its authority with respect to those agreements. They are, as I understand it, being closely observed by the State Department and by representatives of the U.S. embassy in Tokyo.

Senator MCCLURE. That's a matter that is of concern to me, because it seems to me, when we look at foreign relations and the relations of other entities, not only presuming upon what the future compact status will be, but it's falling between the cracks now.

If I read that fisheries compact correctly, the Japanese did them in, and apparently with the benign neglect of the U.S. Government.

Mrs. VAN CLEVE. I haven't enough information to permit me to agree or not. I do know that——

Senator MCCLURE. Don't you think that the Department of the Interior, through the High Commissioner, has some responsibility with respect to those long-term assignments of resources?

Mrs. VAN CLEVE. Indeed, yes. And it's my understanding that there has been some oversight exercised by the Assistant Attorney General on the High Commissioner's staff. I think that it would be most useful if we provided for the record, information as to what role different people have played.

It is my understanding that, as current laws and regulations require, the initial arrangements between—the initial contacts between the Marshall Islands Government and the Government of Japan were made first through the High Commissioner, then Interior and the State Department. Subsequently, both the High Commissioner's lawyer on this subject and the U.S. embassy in Tokyo have observed and overseen what the Marshalls and the Japanese have negotiated.

I don't know that they've played an active negotiating role, but I do understand that they have been aware of these developments.

[The information follows:]

Negotiations between the Government of the Marshall Islands and the Japanese Government concerning fishing rights have been conducted in a manner compatible with these requirements. The High Commissioner has been informed concerning the interests and the plans of the Marshall Islands Government and has in turn kept the Department of the Interior informed. Through both the Interior Department and the State Department's own representative in Saipan, the Status Liaison Officer, the State Department has been informed and has in turn made suitable representations to the Japanese Government. During the fisheries negotiations between the Marshalls and the Japanese representatives, the U.S. Government has been represented by an employee of the U.S. embassy in Tokyo, and the trust territory government by one of its employees, Assistant Attorney General Dean Robb.

In repsonse to a recent request for more detailed information on this subject, the Acting Deputy High Commissioner of the trust territory has cabled to the Interior Department the following: Mr. Robb was a member of the Marshall Islands Maritime Authority appointed thereto by the High Commissioner pursuant to section 8.407(A)(I) of the Marshall Islands code. As a member of the authority Mr. Robb was present at all negotiations save for the final session and the signing of the agreement. Mr. Robb actively participated in the authority rendering advice in many areas. Mr. Robb notes that a representative of the State Department Fishing Attache office in Tokyo was present at all the sessions and that the negotiations proceeded with the approval of the Department although it took no part in any decisionmaking. The Fishing Attache office was fully aware of everything which transpired in the negotiations. Mr. Robb further notes that the office rendered advice to the Marshall Islands Government upon request, this advice concerning such matters as prices. different negotiating experiences with the Japanese, and other valuable information.

STATE DEPARTMENT ROLE IN TRUST TERRITORY

Senator McClure. Is there an interagency agreement or a memorandum of understanding between the Department of the Interior and the Department of State that the Department of State would exercise responsibility in this kind of case?

Mrs. Van Cleve. I think no memorandum of understanding, but I think this is a consequence of the fundamental Executive order giving authority to the Secretary of the Interior for administration of the trust territory, but requiring that the Secretary of State play a role when foreign affairs are at stake.

Senator McClure. Play a role. But that doesn't absolve Interior of responsibility, does it?

Mrs. Van Cleve. No, it does not. Of course not.

Senator McClure. So the content of that agreement and the negotiations are the responsibility of the Department of the Interior?

Mrs. Van Cleve. I'm not sure that that is true. I really don't know. I think the Marshall Islands Government might argue, and I'm not sure that they would not be right, that this agreement is its responsibility under the approved Marshall Islands constitution.

Senator McClure. You're not sure?

Mrs. Van Cleve. I am not sure, and we can say more on this subject. I have simply not encountered the question before, and I don't think we have a proper position on it. I'd like to think it through.

Senator McClure. I have a somewhat different view of it. I would appreciate it if you could provide for the record a more complete exposition of your view, because I think this is an example of the way events are getting away from us with people not being quite sure what the relationship is and what the responsibilities are. And while we are negotiating a compact for different status and we hope to conclude that, we still are operating under the old. And it seems to me that there may have been a little letdown here on the assumption that we no longer had a responsibility.

Mrs. Van Cleve. I understand your concern, and I must say many of us share it, and we will look into this matter and respond to you.

I think you may also wish to pursue this with the representative of the Marshall Islands Government who will be here this afternoon.

[The information follows:]

INTERIOR/STATE RELATIONSHIP

The Secretary of the Interior derives his authority for the civil administration of the trust territory from Executive Order No. 11021 of May 8, 1962. That Executive order delegates full authority to him, with two exceptions only: The authority to declare certain parts of the trust territory closed for security reasons is retained by the President; and with respect to matters concerning foreign policy, the Secretary of State must be consulted. As to this latter exception, the Executive order provides in pertinent part that * * * the Secretary of the Interior shall keep the Secretary of State currently informed of activities in the trust territory affecting the foreign policy of the United States and shall consult with the Secretary of State on operations of policy concerning the trust territory which relate to the foreign policy of the United States * * *

Consistent with the foregoing, the Secretary of the Interior, in his delegation of authority to the High Commissioner of the trust territory, has provided that communications and relationships * * * with foreign governments and organizations shall be through the High Commissioner and the Secretary of the Interior * * * (Secretary of the Interior Order No. 3039, April 25, 1979).

TRUST TERRITORY REVENUES

Senator McCLURE. Over the past several years, over 90 percent of the total government revenues for the TTPI have been provided by the Federal Government. What will the situation be in fiscal year 1982?

Mrs. VAN CLEVE. Our current estimate is that Federal resources will support the trust territory to the extent of 87 percent in 1982.

Senator McCLURE. You're looking at administrative expenses or total expenses?

Mrs. VAN CLEVE. I'm looking at all trust territory revenues to the extent that we can predict them in 1982. We have done so at the level of $15.6 million.

REDUCED EPA FUNDS

Senator McCLURE. Let me ask this question before you get into the figures, so that you might understand where I'm coming from as well.

I understand that EPA has identified several million dollars planned for the trust territory which will not be available in fiscal 1982. Is that included in your computation?

Mrs. VAN CLEVE. I have only total figures here, and I can't give you the precise components. The work was done by one of my colleagues not now present.

What our figures do show is a drop in Federal grants, which would include EPA.

Senator McCLURE. How much of a drop?

Mrs. VAN CLEVE. From about $38 million in fiscal 1980 to $35 million in 1981 to $30 million in 1982. So a drop from $35 to $30 million. That is our estimate.

Senator McCLURE. Can you tell this committee why EPA dollars will not be available?

Mrs. VAN CLEVE. I cannot tell you now, but I will be glad to find that out and supply the answer.

Senator McCLURE. If you will, please.

[The information follows:]

REDUCTION IN EPA FUNDS

Following is a letter from EPA to the High Commissioner identifying the reason and amount of the reduction.

MAY 4, 1981.

Mr. ADRIAN P. WINKEL,
High Commissioner,
Trust Territory of the Pacific Islands, Saipan, CM

DEAR MR. WINKEL: The President has proposed to Congress, in his 1981 budget, reduced appropriations and a more cost-effective targeting of the municipal waste treatment grant program administered by the Environmental Protection Agency. This action will reduce near term expenditures for capital investments consistent with the need to reduce expenditures. The President has proposed a rescission of $1.7 billion in appropriations for 1980 Public Works Act (Talmadge-Nunn).

The effect of this rescission on the trust territories is listed below:

	Unobligated balance March 12, 1981	Rescission	Balance as of April 1, 1981
Fiscal year:			
1977—public works	$4,287,050	$4,287,050	
1979—budget authority	115,334		$115,334
1980—budget authority	4,410,454	956,049	3,454,405
1981—budget authority	4,454,000	1,289,836	3,164,164
Total			6,990,649

Because of the reduced appropriations, and knowing the public health concerns that these projects were to address, we suggest that the fiscal year 1982 capital improvement budget be supplemented to replace those funds lost through the President's rescission.

If we can be of any assistance, please feel free to contact me.

Sincerely yours,

FRANK W. COVINGTON,
Director, Water Division.

PROJECTS AND TOTAL AMOUNT OF REDUCTIONS

Senator MCCLURE. What are the projects affected and the total amount of the reductions?

Mrs. VAN CLEVE. They are largely, as I understand it, projects in the Marshall Islands having to do with water and sewers, but I think we can give you—Mr. Gallagher can expand upon that.

Mr. GALLAGHER. Those projects have not yet been identified. We just received a copy of the EPA letter rescinding some $6 million of funds that were to be committed to the trust territory.

Senator MCCLURE. The dollar drop that Mrs. Van Cleve just gave me was $5 million total of all——

Mr. GALLAGHER. That does not include EPA money. That projection was made prior to our finding out about this EPA funding, which was just recently. We've gone out to the High Commissioner and to the Navy and have asked them to identify the projects involved, whether they're ongoing——

Senator MCCLURE. So the grant moneys would drop from $35 to $24 million?

Mr. GALLAGHER. That's correct.

Senator MCCLURE. Do you plan to replace those lost sums?

Mr. GALLAGHER. First of all, we have to find out what projects they fund and take a look at the overall construction program, and again, as Mr. Solomon pointed out earlier, we probably will have to do some reprograming.

WATER AND SEWERS IN THE TRUST TERRITORY

Senator MCCLURE. In the trust territory, what is the condition of the water and sewage systems of each district?

Mrs. VAN CLEVE. I think Mr. Solomon, who just looked at all of them, can give you a quick summary.

Mr. SOLOMON. Very poor is a quick answer to it. They all, with the exception of Ponape, have some degree of water hours.

Senator MCCLURE. Some degree? What kind of degree?

Mr. SOLOMON. Well, in Palau, for instance, they have 2 hours in the morning and 2 hours in the evening, but I understand just recently, because of lack of rainfall, that's been reduced further.

Senator MCCLURE. They have 4 hours of water supply a day?

Mr. SOLOMON. That's correct, sir.

Senator MCCLURE. So that's some hours, indeed.

Mr. SOLOMON. It is. The Marshalls are probably about the worst case right now. They're down to only about an hour a day.

Senator MCCLURE. And we're reducing the amount of money being put into these projects?

Mr. SOLOMON. I'm not sure there's any reduction in the Marshalls yet. We haven't determined that. Part of the Marshalls's problem is the drought and lack of rainfall, and they didn't have those storage tanks constructed in time to catch the rainfall. So they're caught in the effects of not having the facilities ready in time and not getting enough rainfall.

Senator MCCLURE. Now, you have given me the hours and supply availability in two areas. How about the other districts?

Mr. SOLOMON. Yap also has water hours. I'm not sure specifically what they are. They are in pretty good shape, but they don't have water 24 hours a day.

Senator MCCLURE. Maybe as much as 3 or 4 hours?

Mr. SOLOMON. Probably a little bit greater than that, sir. They're in pretty good shape. Truk has water hours which approximate about 6 hours a day of water, and Ponape has water pretty much on a 24-hour basis.

Senator MCCLURE. Why don't they have adequate water? I mean, we're not going to pretend that those conditions are acceptable or that that is an adequate supply. Are we?

Mr. SOLOMON. No, sir.

Senator MCCLURE. All right. My question presupposed that, but I thought I'd better get a response before I went that far. Why do we have unacceptable water supply?

Mr. SOLOMON. There are a number of reasons that have been put forth. I could speculate on what I have been told, but I would rather the Navy addressed that. They're working on it on a day-to-day basis.

Mr. SMITH. We have, in our planned 1981–82 construction contracts, water resources in the following areas, sir. In Palau, we have a water resources project developed largely as a result of EPA increasing sewer grants to 100 percent funding.

Senator MCCLURE. Is that one that's being cut?

Mr. SMITH. It would be the sewer work that would be cut by EPA. That would be a decision on the priority basis for the High Commissioner as to whether we in fact cut that project or other work in Palau. That priority, that he must address, has not been set yet. We have planned, assuming that the moneys remain available, a water resources project be awarded in August of this year in Palau.

Senator MCCLURE. Is that in EPA?

Mr. SMITH. The money would be the usual Department of the Interior moneys which were freed up as a result of EPA giving a 100-percent grant on the sewer. If we, in fact, loose the sewer money, and the Interior Department works with the High Commissioner and elects to put some sewers in using Interior money, it could impact on the water. Yes, sir, that's a decision they will have to make.

Senator MCCLURE. Mrs. Van Cleve, which has the priority, the water or the sewers?

Mrs. VAN CLEVE. I regret I can't give you a useful answer. They are both obviously crucial and we would have a very hard time deciding.

Senator MCCLURE. Do you have any idea when you would be able to provide an answer?

Mrs. VAN CLEVE. No; I'm afraid I don't.

Senator MCCLURE. Somebody's going to have to make that decision some time, aren't they?

Mrs. VAN CLEVE. Yes.

Senator MCCLURE. Apparently we don't know who will make it or when they will make it.

Mrs. VAN CLEVE. Well, the decisionmaking process with respect to capital improvements in the trust territory involves, in the first instance, the Navy consulting with the High Commissioner and his people, and the High Commissioner in turn consulting with the affected government. It's after that group has reached its collective decision that the process reaches us, and we, in turn, deal with our own budget people within the Department, they with OMB, and so on. So, indeed, you are right; the decision has to be made, but it is a complex process involving a lot of consultation, as I think it should.

Senator MCCLURE. You have indicated that you have looked at the water and the sewer. Do you have an opinion as to which has priority?

Mr. SMITH. From an engineering standpoint, sir, a sewage treatment facility is no good without a means of carrying sewage to the sewage treatment plant, and water is the carrier of sewage to the plant, so if you don't have a water supply, the plant is not going to operate.

Senator McCLURE. So, in effect, water supply comes first.

Mr. SMITH. In my opinion, from an engineering standpoint, without a doubt, sir. It's also very much more desirable to have drinking water.

Senator McCLURE. Can you give me a rundown on water and sewage on the other districts?

Mr. SMITH. On the island of Yap we have a water resources development project which will include leak detection analysis—funds were appropriated last year, in 1981; the construction contract award is estimated in January 1982. This includes some work in the northwestern part of Yap, the Gimil-Tomil area. It will also include the drilling of some wells, water wells, and some storage tanks.

On the island of Truk we have a water resources development project which will use fiscal year 1981 funds, construction contract award is planned in October 1981.

Senator McCLURE. You're giving me the plans for the future. Does this include an assessment of current condition?

Mr. SMITH. No, sir, I do not have an assessment of the current condition.

Senator McCLURE. Go ahead.

Mr. SMITH. On the island of Ponape we have planned a water resources development project funded in fiscal year 1981; construction contract award date has not been established as we still have the project under the scoping.

On the island of Kosrae, we have a water treatment plan to be constructed on the island, in the village of Tofol, and a distribution system for that town and Lelu. Contract awards are planned in July of this year.

In the Marshalls, a water quality project was funded in fiscal year 1981. It will upgrade the water treatment facilities at the government center of Majuro, and will include conducting testing of the present water quality to determine additional water treatment facility requirements. Contract is planned for award this month.

Senator McCLURE. Mrs. Van Cleve, would you provide for the record a report giving the condition of the water and sewage systems in each district and the availability of water and water hours, pressure levels of water? Integrate into that, to the best that you can, the projections for the future with respect to the construction projects and how much of the current need will be met if the projects are completed.

Mrs. VAN CLEVE. We would be glad to do that, Mr. Chairman.

Senator McCLURE. I suspect that even with the completion of the projects outlined, we will still have an inadequate supply.

[The information follows:]

STATUS OF WATER AND SEWER FACILITIES BY STATE

MARSHALLS

MAJURO

Water.—As of July 1981, Majuro had water from 6 a.m. to 10 p.m. The water situation has improved due to the recent completion of additional storage capacity. Lack of rain and some problems with leaks in the distribution system prevent 24 hour distribution.

Sewer.—There is no sewer system in Majuro. Sewage disposal is by cesspool (all toilets are flushed by salt water). A project is now being planned to install a sewer system.

EBEYE

Water.—Water storage and distribution is inadequate, water is barged in from Kwajalein. CIP funds have been appropriated to help alleviate the water problems.

Sewer.—Sewage is processed by a salt water flushing system through a treatment plant. System is operational but there are few household hookups.

PALAU

Water.—5 year CIP program provided for improvements to Gihmel Dam and replacement of distribution line from treatment plant to downtown Koror.

Downtown Koror has been on water hours for the last several years (2 hours in morning and 2 hours in afternoon). Recent drought has further limited the water hours.

System in downtown Koror has major leaks as well as leaks in households and at household hookups. Navy, OICC also believes that the people use an excessive amount of water and water discipline measures are necessary.

(Note.—Storage will be a problem even if system is 100 percent operational).

Sewer.—Koror has a secondary sewage treatment plant, however, it only operates a few hours a day (one-tenth of capacity) due to the fact that all households are not connected to the system and the water hours.

PONAPE

Water.—Ponape has an abundance of water with no water hours. The system is operational but serious problems exist with pressure due to system leaks and high usage. Corrective actions are being initiated.

Sewer.—The plant is operational but the flow is low due to the absence of sewer laterals and household hookups.

EPA funds were contemplated in the CIP program to construct laterals and hookups; however, it is not known at this time whether these moneys will be available.

TRUK

Water.—The state capital of Truk has an operational system but the quantity of water is insufficient. About one-third of the population in the state capital of Moen have 24 hour water while the remaining population on the southern side of Moen has water hours from 6 a.m. to 9 a.m. and 5 p.m. to 7 p.m. The CIP program is providing additional distribution lines, wells, river intakes and filtration system and thus should alleviate the water hours.

Sewer.—There is an operating system but it is only operating at 20 percent of the design load because all households are not hookedup to the system. The CIP program provides for the installation of additional primary and secondary collection lines.

YAP

Water.—The downtown area "Kolonia" is on water hours from 6 a.m. to 10 a.m. and from 3 p.m. to 10 p.m. Water projects (wells) are being scoped for the villages of Gagil-Tomil. The state is faced with some household leaks, distribution line leaks, and high usage. The local public works department is working on a project to detect and repair all leaks.

Sewer.—Yap has a functioning sewage disposal plant with minimal inflow due to the absence of lateral sewer line and household hookups.

KOSRAE

Water.—There presently is no central storage or distribution system. Water is provided by wells, streams, and catchments. The CIP program provides for a water storage and distribution system for the two major villages. This has not been contracted out as of this date.

Sewer.—There presently is no sewer collection or treatment plant. This also is included in the CIP program for Kosrae.

Note.—The water and sewer problems noted above are for the major populated islands, "state capitals." This report provides for the major seven islands that have water and sewer systems out of the 100 populated islands in the trust territory. The population served on these major islands is approximately 32 percent (39,000) of the entire TT population of about 117,000 as of calendar year 1980. The balance of the population, some 80,000, obtain water by catchment, streams, and well. Sewage disposal is by streams or directly into the lagoon or ocean.

PROGRAMED IMPROVEMENTS

Senator McCLURE. I say that because I don't want to leave this by leaving the assumption that if we make these improvements as programed, even if they are kept on schedule, that we would then be adequate.

Mr. Solomon, could you comment with respect to that? You have some knowledge of the conditions out there. If we built those projects that are outlined, would we then be sufficient in water supply and sewage systems?

Mr. SOLOMON. I'm not an engineer, Mr. Chairman. I would just say that some of the current problems we have will not be addressed by the ongoing construction program. That really is a problem of the scope of the original plan. It didn't allow for some sections of the water lines to be put in, for replacement of segments of the system, or of the total system. So as a consequence, we are tying into systems that were already in place, and we do have some problems with leaks, and are attempting to identify these by metering the entire system.

Senator McCLURE. I hope you will give us the benefit in that report which I have requested, which Mrs. Van Cleve had indicated will be filed as soon as possible, a realistic assessment of where we stand. Not only where we stand, but where we're going to be. I have been tracking this for too many years to be easily led to believe that we have done what we should have done or that we are doing what we should be doing or that having done what we planned to do, that we will have attained much.

HOSPITAL CONDITIONS IN THE TRUST TERRITORY

What's the condition of the hospital facilities in each district?

Mrs. VAN CLEVE. In several the hospitals are new and attractive and functioning well. In several others they are not. Going from district to district, and including the Northern Marianas, the Northern Marianas is, as you know from our budget request, in need, I believe, of new hospital facilities, and we have budgeted this year for architectural and engineering services. That process is proceeding nicely in terms of consultation between Northern Marianas representatives, Interior representatives, and those of Health and Human Services.

Yap has a new hospital which is handsome, and apparently functioning well. It was dedicated about 2 years ago, and it's in good condition.

Palau has an old military field hospital which the Palauans have kept in extraordinarily good operating order considering that it is old and inadequate. In the judgment of most people who have seen it, it needs replacement.

The Ponape hospital is relatively new. It, too, is attractive. It's foreseen as a referral hospital, and is functioning, to some extent, in that way. We are concerned about maintenance problems in the Ponape hospital, and one of the concerns that Mr. Solomon's group directed themselves toward was hospital maintenance because it's an expensive building, and we want very much to do what's necessary to encourage that it be kept up.

Moving eastward, we then come to the Truk hospital, which is a very troublesome and very visible example of bad maintenance. It's relatively new, dedicated in the early 1970's, it is falling into serious disrepair. The High Commissioner has found something around $500,000 in his existing resources, and made them available, made that $500,000 available for emergency repairs for the Truk hospital, and we are concerning ourselves with where we can find the additional sums necessary for the further maintenance that's required.

Senator McClure. Whose responsibility is that? Local government?

Mrs. Van Cleve. I suppose at this point it's essentially the responsibility of the Truk state as part of the Federated States of Micronesia. We recognize, however, that its resources are not going to be sufficient to put that hospital back together. The estimates on it, on the total sums needed to put the Truk hospital in good shape, range between $1.5 to $2 million.

Senator McClure. That hospital is less than 10 years old, isn't it?

Mrs. Van Cleve. It's about 10 years old.

Senator McClure. It has declined; routine maintenance has not been provided over the last 10 years?

Mrs. Van Cleve. That's quite right.

Senator McClure. Whose responsibility is that?

Mrs. Van Cleve. It was the responsibility of the government of the trust territory, directly, until the Federated States came into being a couple of years ago, and is now essentially the responsibility of the local government.

Senator McClure. So we, through our Federal Government, the Department of the Interior, Trust Territory Government, did not do an adequate job for those years?

Mrs. Van Cleve. I think I would have to accept that indictment, yes, and I suppose I would have to accept it as readily with respect to the other facilities which have not been properly maintained. The fundamental difficulty, as I'm sure you recognize, is that it is always more attractive to use money for new facilities when money is short. When the needs are great, it is maintenance that is deferred.

Senator McClure. I understand that. That's why I asked the question a while ago, why are you asking for new capital construction funds when you can't maintain the old.

Mrs. Van Cleve. And I think I responded that we recognized the problem.

Senator McClure. And you're still being seduced by it.

Mrs. Van Cleve. The system sometimes, as you recognize, does not reveal the results that we would all welcome most enthusiastically, and that is one of the problems we have at the moment.

Moving then further eastward, I think the Majuro hospital is the one that remains. That, too, is a regrettably deficient facility, one made public on national television a couple of years ago. We obtained an appropriation of some $8.5 million, I think 2 years ago, for the construction of a new hospital in the Marshall Islands district. That sum, however, remains unspent because the Marshall Islands Government has not yet, or had not until recently, concluded how it wanted that money spent, for what type of facility and what location. It has, within recent weeks, and I think it was during May of this year, told us, or told the High Commissioner that it would like to spend about $5 million of that amount in constructing a new hospital on the island of Majuro. So it appears that some progress has been made recently toward a new facility in Majuro.

So some of the hospitals are good, but most need help.

Senator McClure. There are facilities on Kwajalein and Ebeye, aren't there?

Mrs. Van Cleve. There are facilities on Kwajalein which are splendid. They're part of the Kwajalein missile range. There is a subhospital, I think we call it, on Ebeye that needs rehabilitation.

Senator McClure. In other words, we have maintained it well for our personnel?

Mrs. Van Cleve. That has been the pattern, of course, of Kwajalein and Ebeye for the 20 years.

Senator McClure. How about at Kosrae?

Mrs. Van Cleve. Kosrae has a new facility that was dedicated just a couple of years ago. I recently read that it needs to have some leaks in the roof repaired, but I think they are relatively minor.

Senator McClure. I didn't know that it rained? [Laughter.]

Mrs. Van Cleve. Apparently it rains so much that some of it came through. I think in general Kosrae is in pretty good shape.

Senator McClure. What plans to do you have to rehabilitate the facilities in Palau and in Truk? You've indicated that you're trying to find some additional money through reprograming for an acceleration of deferred maintenance. Is that all that you plan to do with respect to Truk, and what do you plan to do with respect to Palau?

Mrs. Van Cleve. Your statement is correct with respect to Truk. With respect to Palau, we have simply not yet been able to budget for a new hospital there.

Senator McClure. Don't you have some deferred maintenance problems there? As I understand it, there is exposed wiring that's dangerous, as well as other similar kinds of problems.

Mrs. Van Cleve. There are problems in the existing Palau facility that need fixing. No question about it.

Senator McClure. You don't plan to wait until you build a new one before you fix the old?

Mrs. VAN CLEVE. Indeed not.

Senator McCLURE. What plans do you have to take care of those?

Mrs. VAN CLEVE. I can't answer specifically, but I feel sure that there are public works funds in the amounts transferred—in the amounts that will be available to the Republic of Palau under the 1982 budget which would be available for that purpose. That will be up to the Republic of Palau.

Senator McCLURE. Available but adequate?

Mrs. VAN CLEVE. I don't know the answer to that question. The question is being explored.

Senator McCLURE. All right. When you get to the end of the exploration, could you provide an estimate of the answer?

Mrs. VAN CLEVE. We will be glad to, Mr. Chairman.

[The information follows:]

PALAU HOSPITAL REPAIR

Palau estimates that $1 million is needed immediately and that $3 million will be needed in the future.

Of the first $1 million, $500,000 would be used to conduct an A. & E. study for total renovation of the old structure. The additional $500,000 would be used for immediate renovations.

HOSPITAL REPLACEMENT

Senator McCLURE. Will rehabilitation that you have outlined provide for the long-term health care needs of the population or would replacement be required?

Mrs. VAN CLEVE. In some instances replacement. Surely both the Majuro and the Palau facilities require replacement in due course.

Senator McCLURE. Palau and Truk?

Mrs. VAN CLEVE. No, Palau and Majuro.

Senator McCLURE. How about Truk?

Mrs. VAN CLEVE. We believe the Truk hospital can be put back together to be an adequately functioning facility.

LEPROSY CASES

Senator McCLURE. What is the situation with respect to major disease outbreaks in the trust territory, specifically leprosy?

Mrs. VAN CLEVE. We have some figures on that subject. The leprosy cases are surprisingly few. At least it seems so to those of us who have seen such troublesome statistics in earlier years. In fiscal 1980, 22 leprosy patients were treated in outpatient departments, and 3 who earlier had been inpatients were discharged, and there were only 6 new cases of leprosy reported in 1980.

Senator McCLURE. Do you know what the situation is so far this year?

Mrs. VAN CLEVE. I do not.

Senator McCLURE. When you say 1980, you're talking about fiscal year?

Mrs. VAN CLEVE. I'm talking about fiscal year 1980.

Senator McCLURE. So we've gone about 8 months of 1981, but you don't know——

Mrs. VAN CLEVE. I have no figures for us.

Senator McCLURE. Can you provide those for us?

Mrs. VAN CLEVE. We'll certainly try to do so, yes.

[The information follows:]

LEPROSY CASES

There were 18 reported cases during the first 8 months of fiscal year 1981.

MEDICAL REFERRALS

Senator McCLURE. What's the situation on medical referrals. How many people are now in Guam or Hawaii?

Mrs. VAN CLEVE. We have not got as full information on that subject as we should have to respond to you, and I would like to provide that for the record. I do have some assorted facts and figures on the subject, but they're not directly responsive. Perhaps I might give you a little information, and then we will provide more for the record.

Senator McCLURE. If you will, please?

[The information follows:]

MEDICAL REFERRALS

Following is a listing of hospitals to which Micronesians were referred in fiscal year 1980, and the lengths of their stays.

HAWAII

Tripler: 153 inpatients; 43 outpatients; 6,029 inpatient days; and 586 visits.

St. Francis: 5 inpatients; 13 outpatients; 73 inpatient days; and 946 visits.

Shriners: 17 inpatients and 1,881 inpatient days.

Queens: 4 inpatients; 3 outpatients; 97 inpatient days; and 14 visits.

Pacific Medicine and Rehabilitation Center: 1 inpatient; 8 outpatients; 1 inpatient day; and 73 visits.

Straub Clinic: one outpatient and four visits.

Kapiolani: 3 inpatients; 1 outpatient; 88 inpatient days; and 4 visits.

GUAM

Naval hospital: 39 inpatients; 45 outpatients; 793 inpatient days; and 104 visits.

Guam Memorial: 13 inpatients and 408 inpatient days.

INPATIENT CARE

Mrs. VAN CLEVE. In fiscal year 1980, 459 patients were admitted from Micronesia to Tripler Hospital in Hawaii for a total of 6,377 inpatient days. The cost at Tripler for inpatient care was $1,827,280 for fiscal 1980. I'm informed that these figures include not just the three trust territory entities, but also the Northern Marianas.

The figures with respect to referrals to Guam show that in fiscal 1981, we budgeted $805,000 and we are budgeting $912,000 for the same purpose in fiscal 1982.

These figures are too assorted to be very helpful to you, and we will try to give you more information for the record.

Senator McClure. They have been helpful, and I will look for that additional information and appreciate that.

Just a quick calculation indicates the average hospital stay in Tripler is about 2 weeks. Of course, that will cover great ranges, of those who come in for a very short period of time and those who stay much longer.

Could you provide additional information as to the length of hospital stay, and if you could get the information and provide it, I would be grateful to have how the trust territory patient's average patient-stay in the hospital compares to the others in the hospital.

Mrs. Van Cleve. We will certainly try to get that information.

[The information follows:]

Average hospital stay

Average hospital stays are as follows:	*Days*
TTPI hospitals	9
Tripler Hospital	40
Guam Naval Hospital	11
Queens Hospital	24
Guam Memorial Hospital	19
U.S. average	7–8

IMPROVEMENT OF LOCAL MEDICAL FACILITIES

Senator McClure. Should local facilities be improved? Is the referral system more cost effective? Or would we be more cost effective in providing local facilities?

Mrs. Van Cleve. I don't know to what extent we have done the arithmetic that would permit a useful answer to that question.

We have done arithmetic in a somewhat analogous question, on the subject of educating the Micronesian young, whether it is cheaper to build a facility in Micronesia and keep them there, as opposed to sending them to the States for an education. And that answer really depends on how long a period of amortization for the facilities you use. So the results are always arguable, no matter what the answer is that we provide, and I suspect the same might be true in this case.

I can, from the top of my head, give you some figures that have emerged from a recent study that we did, that might be relevant, though not answer the question fully, by any means.

We are charged by law with providing the Congress with a medical plan for the nuclear victims of the Marshall Islands, or possibly for all of the Marshall Islands. There is a dispute among the interested people, as you perhaps know from our report, which we sent to you, as to just what the statute requires.

We entered into a contract with a medical school to do the study on the question of the cost of that medical care. What we learned as a result of that study—and we have not embraced its conclusions, but they seem reasonable, and they are worth reporting, therefore—was that if medical care, primary, secondary, and tertiary, were provided in the Marshall Islands, and the facilities necessary for that care were constructed, the costs the first year would be around $11 million.

If, on the other hand, we provided only primary care for the nuclear victims that we have all regarded as such—the people of Bikini, Enewetak, Rongelap, Ujelang—and sent them off-island for some secondary and all tertiary care, sent them, probably, to Honolulu, the costs would be in the range of, I think, $4 million. Considering that the number of people in the second category is tiny, compared to the population of all of the Marshalls, the figure is still surprisingly high.

I offer that for what it's worth, and I don't suggest that it's worth as much as either of us might wish.

MEDICAL DOCTORS

Senator McClure. How many doctors are there in the trust territory?

Mrs. Van Cleve. The current number is 47, of whom three are Micronesian M.D.'s. Some of the 47 are expatriate doctors. I don't have that precise figure. The bulk of the 47 are Micronesian medical officers educated at the medical school in Fiji. That's the school that does a 5-year post-high-school program that's very well thought of throughout the Pacific.

Senator McClure. How many of the 47 are fully trained doctors?

Mrs. Van Cleve. Minimally, the three Micronesian M.D.'s. And I dont' have the figure for the remaining M.D.'s. At a guess, and we'll fix this for you for the record, at a guess, probably 8 or 10 are M.D.'s and the remainder would be lesser trained individuals.

Senator McClure. Could you provide not only the exact number, but where they are located?

Mrs. Van Cleve. Indeed, we can. I am sure we can do that.

[The information follows:]

M.D.'s in Micronesia

There are 14 M.D.'s in the TTPI, as follows: Marshalls, 3; Kosrae, 2; Ponape, 4; Truk, 2; Yap, 1; and Palau, 2.

Of the 14, 11 are expatriates and 3 are Micronesians.

INTER-ISLAND SHIPS

Senator McClure. What is the present condition of inter-island transportation within the trust territory?

Mrs. Van Cleve. Mr. DeYoung, I think, can speak best to that. The ships have been transferred from trust territory headquarters to the entities and it is now their responsibility.

Mr. DeYoung. There are currently 21 vessels in the trust territory, of which 12, I believe, are in operating condition. The others are mothballed and are, in the main, not usable, "usable" in the sense that—it would cost more than they're worth to recondition them and put them into shape to be used again.

There are seven new field trip vessels which were funded in earlier appropriations and built between 1977 and 1979, that are the mainstay of the intra-field ship service in the various areas. Two or three of these now are in the process of having certain problems, but they are problems relating primarily to the drydocking not being carried on at regular times; and also unavoidable accidents, where a ship may strike a reef and damage its rudder, necessitating taking it out of service or going to a shipyard for repair.

There are a number of ships on loan to the trust territory, ships of a little larger category, from the Maritime Administration, which are in the process of being transfered to the trust territory, and in turn, eventually will be divided up amongst the entities.

Senator McCLURE. How many?

Mr. DEYOUNG. There are six Maritime ships; however, only three are in usable condition. The others are mothballed, and I think will be scrapped.

Senator McCLURE. Why would we bothter to give them ships that we identify as being scraps?

Mr. DEYOUNG. Only, I think, the ones that are to be scrapped are those that it would cost more to take out of the area. And there is a small possible salvage value in the future to the entity that would have it.

Senator McCLURE. Is it something that we're giving them, or something that we're relieving ourselves of?

Mr. DEYOUNG. I would say, Mr. Chairman, it's perhaps a combination of both, in some instances.

One example is of a ship that was on loan and was returned. Under MARAD regulations, these ships must be scrapped because they cannot be used in other commerce. This is a restriction on U.S. flagship—cannot be put into competition with foreign flag vessel.

This one particular ship simply was put up on the market for bid. Only one bid was received. I believe it was just for a few hundred dollars. It was not even worth accepting the bid. It would cost more money to accept the bid and do the paperwork than the ship was worth. And it simply, as I said, is mothballed.

Senator McCLURE. Am I correct, then, in summary, there are 12 operating ships? And 3 Maritime ships? A total of 15, but 2 or 3 of those 15 have problems that require repair?

Mr. DEYOUNG. That's correct.

There are a number of trust territory owned vessels, former field trip vessels, that were acquired, not through the Maritime Administration, but in earlier days, either through the Army or through the Navy, and then converted into field trip vessels.

There are probably five that were built to order as field ship vessels by the trust territory 15 or 20 years ago. These all have reached a condition whereby essential repairs would be more expensive than actually, probably, replacing them in the future.

Senator McCLURE. Then we ought not to count them; is that what you're saying?

Mr. DEYOUNG. What I am saying is they're physically there, but——

Senator McCLURE. They're not operating.

Mr. DEYOUNG. They're not operating.

Senator McCLURE. They're not operable, and they're not likely to be operable.

Mr. DeYoung. Not economically operable.

So we're talking in terms at the present time of a fleet of 12.

Senator McClure. Plus the three Maritime?

Mr. DeYoung. That includes the three Maritime.

Senator McClure. That includes the three Maritime.

Mr. DeYoung. Yes.

In addition, there are—in the Marshalls particularly, several privately owned vessels that do operate, in some instances operate successfully—small operations, but they do take up a certain slack in the intra-transportation needs.

Senator McClure. How often are the outer islands visited?

Mr. DeYoung. This varies considerably. It ranges from, I would say, 6 weeks up to 3 months in some instances, depending on emergency needs that may arise.

Senator McClure. But are there regularly scheduled visits on that frequency?

Mr. DeYoung. In the main, yes.

Senator McClure. Six weeks to 3 months?

Mr. DeYoung. Yes.

The 3-month period, as in the past, has been generally in the Marshall Islands, when they have had a shortage of ships, and there have been certain areas they simply have not been able to service.

TRANSPORTATION REPORT

Senator McClure. What's the status of the transportation report required under Public Law 96-597?

Mrs. Van Cleve. It has no status at the moment. And we have not been able to conclude what direction we should proceed with respect to that report.

The matter is being considered by the new administration, and we have not yet decided what steps to take. We are mindful of the statutory admonition, however.

Senator McClure. What was the statutory admonition?

Mrs. Van Cleve. That we supply a report to the Congress by October 1 of this calendar year.

Senator McClure. But you haven't started it yet?

Mrs. Van Cleve. We have not, because we have no resources for the full-scale report that we think was contemplated, as nearly as we can tell from the legislative history.

We are trying to decide whether we can, with very limited resources, do something that would be constructive on this subject.

Senator McClure. By October 1?

Mrs. Van Cleve. That's correct.

Senator McClure. You still plan to meet that date?

Mrs. Van Cleve. We will do something by October 1, and we hope that we will be able to supply at least half a loaf that will be better than none. But we know that it will not be more than a half a loaf.

What I mean to be saying is that the statute requires a report in very considerable detail. There are perhaps 15 very technical elements recited in the statute that the report is supposed to cover. Our best estimate, from two different sources, as to what that would cost if we were to contract for the service, is about $100,000. We don't have $100,000.

Senator McClure. So you don't intend to comply with the statute?

Mrs. Van Cleve. We don't at the moment see any way by which we can, but we are hoping that we may be able to find an expert in any number of possible Federal agencies who could speak intelligently to the problem to which that statute is directed, even if it would not be the $100,000 report that might be desirable.

Senator McClure. When did you identify the fact that it would be impossible to get the full report?

Mrs. Van Cleve. December 24, the day the President signed the bill.

And we have attempted to get a focus on the issue, but the transition situation in our organization has made it really rather difficult to reach decisions on that kind of subject, up through and including the present.

Senator McClure. Have you communicated with the Congress prior to this date the impossibility of meeting that requirement?

Mrs. Van Cleve. No; because I would not yet want to concede that it is absolutely impossible. As I say, we have got some short-range prospects that we haven't completed exploring.

Senator McClure. As I understand, your answer is you will be unable to comply with the statute, but you might be able to do something that falls short of compliance.

Mrs. Van Cleve. We will certainly be unable, as we currently see it—we will be unable to do the $100,000 study. Even that, I cannot say for certain, because it may be that our new administrators might decide this is so important that they should find the resources elsewhere. I don't know where that would be, but I would not want to ignore the possibility.

ALTERNATIVE ENERGY STUDY

Senator McClure. What's the status of the alternative energy study mandated in the same statute?

Mrs. Van Cleve. That has been launched. The Department of Energy has undertaken initial meetings with key experts in Guam with respect to the Pacific, with experts at Savannah River, here on the mainland, with respect to the Virgin Islands. The responsibility is, of course, placed in the Secretary of Energy, with consultation with the Secretary of the Interior. And our office is participating in those initial meetings.

The Department of Energy has identified a sum—I believe it's $100,000, which is, they believe, sufficient for the so-called phase 1, which is essentially the collection of information to find out where we are all at. So that has begun. And that deadline is, of course, a little later. That's December 1982.

Senator McClure. It costs $100,000 to find out where we are at? Just the initial inventory?

Mrs. Van Cleve. That's the figure that the Department of Energy——

Senator McClure. Mr. Solomon already knows. He's just been out there. He went through all the districts. All you have to do is plug into him, and you would get it right now.

Mrs. Van Cleve. He can be very helpful on all subjects.

Senator McClure. I am sure he could be helpful. But maybe if you gave Mr. Solomon half that $100,000, he'd talk. [Laughter.]

Senator McClure. And then you would have the information.

You know, it continues to amaze me, the ability of the bureaucracy to obfuscate. Whatever was plain is made murky. Whatever is immediate can be postponed. Surely, we have some idea of where we stand in the districts now. And it doesn't take a $100,000 study to find out where we start.

Let me refer to the Navy. They found out it rains. They already know that. They're not going to commission another study to find out that it rains. And I'll bet the Navy can tell you right now—what the existing facilities are; isn't that correct? Can't you tell us what the existing facilities are?

Mr. Smith. I can speak to those which we have worked on as part of the CIP. We have not worked on all those facilities. Only that part of the capital improvement program.

Senator McClure. You know, we have been administering that territory for years, and somebody says, "What do we have?" and we have got to commission a study to find out. I'll bet we know more about the drapes in your office than we do about the facilities out there. And we don't commission a study on that.

Mrs. Van Cleve. Mr. Novick suggests that I made an error a moment ago. And I think my error is going to make the problem, perhaps, worse. Though if I correct it fully, maybe not.

The sum for the energy study initially identified by the Department of Energy is not $100,000, but $200,000; however, it does——

Senator McClure. Why don't you do it for them for free? Just pull off your shelves what you already have, and say, "Here, now phase 1 is done. Start on phase 2."

Mrs. Van Cleve. May I emphasize that we are dealing with more than the trust territory. The subjects of the study are all the territories, plus Puerto Rico.

Senator McClure. I understand that. That made the problem broader. But maybe they know something about what they have. We don't have to study to find out what they have.

You know better than that. I know better than that. Everybody in this room knows better than that. We have been talking about energy facilities in the trust territory for years. There isn't anybody in this room who is familiar with the trust territory that doesn't have a pretty good idea of what the facilities are right now.

To indicate that phase 1 requires a $100,000 study, and that we haven't yet started it, is an indication of why the Government is so frustrating, and is judged by many to be incompetent. It's hard to quarrel with that evaluation. There has got to be a better answer to that than to say, "All right. Now we have got a new Federal agency involved, and they are going to start studying the problem, and they will make an inventory."

We have got those inventories. I have friends who retired from trust territory government a number of years ago who could tell you what they were then, and all we need to do to update that is to say they're worse now.

Mrs. VAN CLEVE. I just want to be sure that the record is clear that we are talking about the responsibility that is not Interior's. This is the Department of Energy.

Senator MCCLURE. That's a nice answer. And I'll get a hold of them.

But you have ways of shaking them a little. You might even have ways of informing them.

Mrs. VAN CLEVE. We helped shake them to the extent of getting this program launched, and it is at least launched.

Senator MCCLURE. Yes; there's been a conference out there in Honolulu, in which we flew some people from here out there for vacations so they could have a conference. They didn't pledge themselves to completion, DOE didn't. They only did phase 1. And I think they have also established an Office of Insular Affairs now.

Great deal. That's why we don't get anything done. We keep this busy work of shuffling papers and holding meetings, flying here and flying there, instead of getting something done.

You surely must get frustrated with that.

Mrs. VAN CLEVE. I have been for 30 years.

Senator MCCLURE. Well, for us to sit complacently and say we're not going to now allow DOE to start that kind of study, with that kind of information, which is already available, it wouldn't take somebody in the Office of Insular Affairs 10 minutes—excuse me, 10 days to go through all the material that you have, would it?

Mrs. VAN CLEVE. Perhaps not. Perhaps not.

The statute though does require consultation with local people, and that does require some travel—obviously.

Senator MCCLURE. Mr. Solomon has already done that for that $50,000 we're talking about. He'll talk to DOE.

Isn't that right? Mr. Solomon, you've talked to local people, haven't you?

Mr. SOLOMON. Yes, sir.

Senator MCCLURE. And you might even remember what they said, and be able to repeat it?

Mr. SOLOMON. Yes, sir.

Senator MCCLURE. We don't necessarily have to send another team out to do it again, do we? Or maybe you didn't consult well enough. We'll have somebody else consulting—well, better.

Mr. SOLOMON. I think the Energy Department had to get some specialists in the alternate energy areas on site to take a look at the situation.

Senator MCCLURE. That's what I was afraid you were going to say, some specialists to go consult.

You know, that's ridiculous. It just is ridiculous.

I hope—I'm going to be seeing Secretary Watt in about 25 minutes, and I'm going to talk with him about it. And I pledge I'll talk to Secretary Edwards about it.

And I would hope, going out of that, something different might be done, so that we at least start out a little farther along than indicate we're going to start something by an analysis.

What efforts has Interior undertaken to evaluate the hydroelectric potential of these areas, especially Palau, Ponape, Kosrae, and Samoa?

HYDROELECTRIC STUDIES

Mr. GALLAGHER. Mr. Chairman, we just recently had a reconnaissance study on the hydroelectric potential done for Ponape. There is—has been a feasibility study done by an outside contractor through the Navy on the hydroelectric potential on Kosrae. A reconnaissance study on the hydroelectric potential in Samoa has already been done.

The only area we have not covered in this is Palau, and we will undertake to do that reconnaissance study for the potential of hydro power on Palau.

Senator MCCLURE. Is the reconnaissance study done by your personnel?

Mr. GALLAGHER. The reconnaissance studies—two of them, for Ponape and Samoa—were done by the Corps of Engineers. The one on Kosrae was done by an outside contractor, through the Navy.

Senator MCCLURE. How about the one to be done on Palau?

Mr. GALLAGHER. Palau? We will probably, again, use the Corps of Engineers.

Senator MCCLURE. Are they aware of it?

Mr. GALLAGHER. Not yet. Not on the Palau one.

Senator MCCLURE. Does DOE know what you have done?

Mr. GALLAGHER. I'm not aware that they are.

Senator MCCLURE. Have they asked you?

Mr. GALLAGHER. No; they have not.

Senator MCCLURE. We've got the office set up, but they haven't talked to you yet? We have been trying for 6 months to get Interior to request a reprograming of the moneys appropriated for Ponape. The letter has not yet been sent.

Mr. GALLAGHER. Well, just basically, the reprograming really was a broadening of the scope to include the other areas in the trust territory; we have since found out that the other areas actually have been done, except for the Palau area. And we think we can do this within the existing resources, without a formal reprograming request.

Senator MCCLURE. You mean you didn't know they've been done?

Mr. GALLAGHER. Basically that's true.

Senator MCCLURE. When were they done?

Mr. GALLAGHER. American Samoa and the Ponape one were done in late fall of last year, and the Kosrae study was done in, I guess, sometime in spring 1978.

Senator McClure. And yet you're going to ask for a reprograming to do them?

Mr. Gallagher. No; we're not. We were just going to broaden the scope. We just wanted to do a reconnaissance study.

The money for the feasibility—for the full-blown feasibility study for Ponape is now being negotiated with the Corps of Engineers.

CAPITAL RELOCATION

Senator McClure. The administration's proposed 1982 funding of $10 million for the architectural and engineering phase of the capital relocation projects—will you propose the remainder in fiscal year 1983?

Mrs. Van Cleve. The budget documents emerging from the Reagan round in March say that the remainder of the $21 million will be deferred until fiscal 1983. We think that suggests there is a sympathetic forum within the administration for including that request for 1983.

COLLEGE OF MICRONESIA CONSTRUCTION

Senator McClure. Would savings be affected if funding for the College of Micronesia were provided at the same time?

Mrs. Van Cleve. It's possible yes, because the college is foreseen as situated where the capital facilities for the Federate States of Micronesia are expected to be.

Senator McClure. Are they actively considering trying to get both of them done together?

Mrs. Van Cleve. We have not budgeted for the college in this budget, but the matter has been actively considered for some months. We're very concerned about the college.

Senator McClure. If we use 1982 funding of $10 million in 1982, and the balance in 1983 for the capital project, wouldn't it make sense, if there is a possibity of savings some money, to run the two in tandem? You've indicated there is a possibility, but you're going to wait until 1983 to evaluate it.

Mrs. Van Cleve. The administration's position on the construction of college facilities is unsettled. And for that reason, I'm not able to suggest that that should be included in this budget.

Senator McClure. Do you have any estimate of what may be required in dollar amounts if it were included in 1982 upon the same schedule being set up for the capital relocation?

Mrs. Van Cleve. We can supply a good figure for the record. The total college facility has been thought to be in the range of $6 to $8 million, so architect engineering fees would presumably be under $1 million for such a facility.

[The information follows:]

College of Micronesia

It is estimated, that if A. & E. work could be done in conjunction with that for the new FSM capital at Palikir, costs could be kept under $400,000.

Otherwise, an estimate of $600,000 to $800,000 is not unreasonable.

ADDITIONAL COMMITTEE QUESTIONS

Senator McCLURE. I have a number of questions with respect to Ebeye populations, conditions and the facilities there, Kwajalein missile range, and the problems with respect to Bikini and Enewetak.

I think I will submit those questions for the record, rather than asking them at this time, if you will answer those for the record, please.

Mrs. VAN CLEVE. We'll be glad to.

Senator McCLURE. As well as some further questions.

That will conclude the questions at this time with respect to the trust territory.

And if you would like to leave, you are certainly welcome to do so.

Mr. SMITH. Thank you, Mr. Chairman.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Hospitals

Question: Is the condition of the Palau and Truk facilities such that replacement would be most cost effective in terms of out year maintenance costs?

Answer: In most instances, it is always less expensive to replace the facilities in Micronesia rather than renovation. In the case of Truk, the basic facility is in satisfactory condition and only ten years old. A complete renovation of the roof, plumbing, electrical, and interior fixtures will restore the facility to its original condition.

In Palau, major portions of the basic structure i.e. wards, laboratory and kitchen, etc. are inadequate and should eventually be replaced. However, in light of tight budget constraints, a renovation program could make the facility adequate for a few more years. The administration portion including offices, records section are new and do not require replacement or renovation.

It is accurate to state that from a cost-effectiveness stand point, the periodic replacement of certain facilities in Micronesia is more cost-effective in terms of out-year operation and maintenance. Because of the climate conditions affecting facilities in Micronesia, they tend to deteriorate to a point where operations and maintenance, regardless of the manpower and funds available, are actually being wasted, and the facility is still almost unusable or operable.

Energy

Question: What efforts are being made to use solar, aside from communications?

Answer: Pilot projects for copra driers, hot water heaters, refrigerators for out-island dispensaries, smokeless stoves, etc.

Kwajalein Atoll

Question: What is the current condition of Ebeye in the Kwajalein Atoll?

Answer: The current condition of Ebeye is that it continues to be overpopulated. The 76 acre island has a population density of about 65,000 persons per square mile.

Ebeye is a congested urban community, slum-like in most respects. Its housing is deficient and overcrowded, and utilities are deteriorated and inadequate.

Question: How many people are there?

Answer: Estimated - 8,000 to 8,500

Question: What is the total population of the Marshalls?

Answer: Over 30,000

Question: How many people on Ebeye are historically residents of Kwajalein?

Answer: Probably not more than 2,500, if all of the atoll is considered. About several hundred if only Kwajalein Island is considered.

Question: What efforts are being made to encourage people to return to the outer islands?

Answer: Government of the Marshalls is attempting to make out-island life more attractive.

(1) Opening up airfields. (Marshall Islands Airline has ten fields now in operation with weekly or bi-weekly service).

(2) Rehabilitation of old coconut groves under Marshalls Government sponsorship.

(3) Improvement of pick-up of copra services.

(4) Radio communication to major outer islands.

Question: What is the condition of basic services on Ebeye?

Answer: (1) Hospital again needs renovation.

(2) Power plant has been rehabilitated, but needs to be expanded.

(3) Community Action Block Grant has rehabilitated some of the Ebeye apartment houses.

(4) Sewer system has been repaired but it is in a deteriorated state (CIP) project will produce all water flushing system and volume system.

(5) Water system plans now being reconsidered. Possibly of a water line from Kwajalein rather than individual catchments on Ebeye or drilling of skimming wells.

(6) Elementary school has been rehabilitated.

Question: Do these services act as a deterrent to people returning to their home atolls?

Answer: Yes, to an extent, but schooling, health care, etc., still draw people to Ebeye.

Question: How many jobs are provided at Kwajalein Range?

Answer: Approximately 550. Priority is given to residents of Kwajalein. Some 75-80 women also work as maids on Kwajalein.

Question: Has Ebadon been opened?

Answer: A short-range, 2,000 foot airstrip was opened at Ebadon on March 6, 1981, and Air Marshalls now flies there once a week (Sunday) from Kwajalein.

Question: How many people will move there?

Answer: As of this time we do not anticipate that many, if any, of the people on Ebeye will move there.

Normal population of Ebadon is 60 residents. Island could support 250-300 on an agricultural economy but appears unlikely. Chances are Ebadon will be developed as a "resort" for Kwajalein base personnel.

Question: Have there been any further interruptions of the range since 1978?

Answer: No. The 1979 and 1980 Kwajalein Interim Use Agreements, to date, have kept the Range open.

Question: What is the present lease arrangement at KMR?

Answer: The United States has an interim use agreement that has provided the Government of the Marshall Islands $9 million in cash, Federal programs, and services in fiscal years 1980 and 1981 for continued use of the Kwajalein Missile Range. The latest agreement was signed November 10, 1980, and negotiations will begin soon to renew the interim use agreement which expires on September 30, 1981.

Question: What are you negotiating for a long-term lease?

Answer: The Department of the Interior sits in on the negotiations for the interim use agreement, but Defense is the lead agency. Long-term provisions are contained in the Use and Operating Rights agreements being negotiated as subsidiary parts of the Compact of Free Association. Until those agreements are finalized and approved by all parties associated with the Compact of Free Association, the Defense Department will probably opt for another short term interim use agreement.

Bikini-Enewetak

Question: What is the present situation with respect to populations of Enewetak and Bikini?

Answer: Enewetak - All Enewetakese are back on the three southern islands of Enewetak Atoll, except for 90 who have returned temporarily to Ujelang. The Enjebi people of Enewetak Atoll currently share housing, community facilities, and agricultural land with people of Enewetak on the three southern islands. They do not have land rights on these islands but are guests of the people of these islands.

Bikini - Except for some 120 people of the 750 Bikinians, they are currently residing on Kili Island in the Marshalls. The 120 are residing on Ejit Islands in the Majuro Atoll.

Question: What is the Administration's position on resettlement of Enjebi in Enewetak?

Answer: Former Secretary of the Interior Andrus, decided against the immediate return to Enjebi because an environmental assessment showed the radiation level so high that the island could not be safely resettled for 30-35 years.

The people of Enjebi have requested Secretary Watt to reconsider former Secretary Andrus's decision. The Department has the matter under review.

Question: How do radiation levels compare between Enjebi at Enewetak and Eneu at Bikini?

Answer: Enjebi Island is 3 times as contaminated as Eneu Island with respect to cesium-strontium in the soil.

Question: What are the long-term prospects for resettlement of Bikini and Enewetak?

Answer: Bikini Atoll

(1) Bikini Island must be off limits for 60-90 years.

(2) Eneu Island - off limits for 20-25 years, if 250 millirem level (required for cleanup and resettlement at Enewetak) is used. This is possible only by use of imported food and stringent regulations on movement. Compliance appears very doubtful.

Enewetak Atoll

(1) All Enwetakese are back on three southern islands, except for 90 who have returned temporarily to Ujelang Atoll (in April 1981).

Question: What is the situation of the Bikini population on Kili?

Answer: Conditions on Kili presently are not totally adequate or satisfactory. The population currently is living in approximately 80 temporary housing units that recently replaced the old tin units put up by the Navy in the 1950's, plus units for some of the returnees from Bikini. In addition to the housing units, a school building, dispensary and a community center/shelter were also built.

Question: How is service provided?

Answer: By regular field trip ship service (sporadic) and special chartered ship trips. A short-range airstrip (3,000 feet) is scheduled for construction this summer.

Question: How many people on Kili?

Answer: Approximately 600

Question: Is air service available?

Answer: Not at this time. Eventually air service will be provided by Marshall Islands Airlines upon completion of the short-range airstrip. Completion date is Fall 1981. Air Service, probably, will be instituted late this year if airstrip construction proceeds on schedule.

Question: What are the docking facilities and are they available year around?

Answer: There are no real docking facilities at Kili. Configuration of the island and prevailing winds, and lack of a lagoon, all make a permanent dock an unrealistic engineering possibility. Experts have concluded a multi-million dollar dock could be constructed but very likely would not be able to withstand the heavy and continual pounding of the surf and waves. An area has been dredged to permit boats, in good weather, to go over and through the fringing reef. This dredged area needs to be made deeper and small dock facilities constructed.

Question: Does the population require any services not presently available?

Answer: Air service to break the present isolation. This is in the process of being accomplished; 1980 storm damage repairs are needed and will be part of the airstrip contract. Storms, however, have been causing about $100,000 to $150,000 damage a year to temporary facilities. A sea wall is needed as well as permanent type buildings for homes, school, community buildings. A Master Plan for Kili permanent rehabilitation is needed.

On-going support costs for Bikini/Kili project are required for a supplementary food program, ship and air transportation costs, and medical expenses.

Question: Should we begin to consider Kili as a permanent home for these people?

Answer: The final decision by the Bikini people has not been made-- pending an outside consultant review of the dose assessments for Eneu. This assessment is underway and should be completed in the fall. Without prejudice to any final decisions by the Bikini people on a permanent home, serious consideration is being given to Kili and Ejit Islands as the semi-permanent home for the Bikini people until they can safely return to Eneu or Bikini.

Question: What is the population on Ujelang?

Answer: During 1980, all of the Ujelang residents moved to the new communities on the three southern islands of Enewetak. The agreement was that some would be given the opportunity to return to Ujelang if living conditions in Enewetak proved to be too bleak. (Note: Trees and other vegetation are in infancy stage at Enewetak.)

90 individuals returned to Ujelang in April, 1981.

Question: How is service provided?

Answer: Service to and from Ujelang now is provided by sporadic field trip service or by special charter boat.

The FY 81 Budget provided $300,000 for construction of a motor-sail vessel for the people of Enewetak and training of an Enewetak crew to operate it. This boat, in the future, will be used to shuttle back and forth between Enewetak and Ujelang transporting fresh food, i.e., coconuts, some breadfruit, pandanus, as well as passengers. It is anticipated that there will be a small revolving community on Ujelang for many years to come.

Question: What problems do you foresee in FY 82?

Answer: The Enewetak support program is funded at $700,000 for FY 82. This includes a supplementary feeding program (in addition to USDA foods); a grove maintenance program and facilities maintenance program. Except for continuation of this program over the next several years we would not anticipate any major problems for the people of Enewetak,notwithstanding the Enjebi resettlement problem.

Question: Does the Administration have a position on the Enewetak petition for separate status presented at the recent Trusteeship Council meeting?

Answer: The Administering Authority, as yet, has not set forth an official position. The request made at the U.N. was the result of an informal referendum of the 600 people on Enewetak. Enewetak always has been a part of the Marshall Islands.

Question: Are specific provisions for Enewetak and Bikini populations under consideration as a part of the status negotiations?

Answer: Yes

Question: If so, what are they?

Answer: In Section 177 of the Compact of Free Association, which was initialed in October/November, 1980 by the United States and the three Micronesian Governments but which is now under review by this Administration, the United States accepted responsibility for compensation for damage to property and persons as the result of the nuclear testing program conducted by the United States in the Northern Marshall Islands between June 30, 1946 and August 18, 1958.

Question: Do you envision separate authorizations or do you plan to present them as part of the Compact?

Answer: The Compact requires that a subsidiary agreement be entered into which shall cover such issues as the just and adequate settlement of related claims, continued administration by the United States of medical surveillance and treatment and radiological monitoring as well as such additional programs as may be mutually agreed. The question of the timing of authorizations for any United States government activities pursuant to the subsidiary agreement cannot be answered at this time since the subsidiary agreement is not yet negotiated.

Question: What is the situation on the Northern Marshalls Radiation Health Plan?

Answer: The Secretary of the Interior on January 7, 1981, presented a preliminary report to the U.S. Congress on a health program for the Marshall Islands as called for in Section 102 of Public Law 96-205. The report, which presented alternate preliminary proposals, noted that the matter was one that required clarification before further work can be done on developing a specific health plan.

There is considerable dispute among the interested parties as to the islands and atolls covered by the statute.

Clarification is being sought as to the intent of Section 102 in order to permit a plan for health care and related programs to be developed.

Question: Have any new cases of radiation-related illnesses been diagnosed?

Answer: Five new cases of thyroid problems were discovered in the Rongelap and Utirik population this past year.

Question: What is your expectation on new cases?

Answer: Current medical estimates place the probability of 3 to 5 thyroid cases in the exposed group of Rongelap and Utirik per year for at least the next several years.

Question: Are funds available in your budget to meet any new claims?

Answer: Yes, an additional $1.0 million was appropriated in the FY 81 budget for the Rongelap/Utirik Compensation Fund. This enabled the High Commissioner to pay all outstanding compensation claims. To date, payments to some 220 individuals totalling $1.8 million have been made.

The fund should have sufficient reserve to take care of all anticipated claims until calendar year 1983.

Question: What will be the costs of health care for current and projected cases?

Answer: For the cases authorized for the Rongelap and Utirik people under P.L. 95-134 it is estimated to be approximately $200,000 per year for the next few years. This is exclusive of any death claims provided for under the authorization.

Political Situation

Question: Please give the Committee a brief accurate description of the political situation in each of the entities.

Answer: Each of the entities has an operating local government established by locally-ratified constitutions. Information on the structure of the Micronesian governments is contained in the FY 1982 Trust Territory Budget Justification. TIA is not now in a position to evaluate the political stability of the three governments, if that is the question, but TIA will be sensitive to that concern as the entities develop.

Question: In your opinion, is there danger of further political fragmentation?

Answer: There may always be that danger in governments which cover numerous islands spread over large areas of ocean. In recent years there have been some suggestions of political disunity in Truk and the Marshall Islands. Such suggestions are disturbing, but we have not yet had the opportunity to appraise the significance of any of these reports. It is something we will be sensitive to, and we would hope that U.S. policies would have the result of discouraging political fragmentation in Micronesia.

Funding

Question: Are the requested funds adequate to provide essential government services in each of the entities?

Answer: It is believed that the FY 1982 request provides adequate funds for essential government services.

Question: Are government functions being transferred from TT headquarters to the local entities?

Answer: Yes. Pursuant to Secretarial Order 3039, the High Commissioner signed memoranda of understanding with the three entity governments regarding the transfer of functions. Certain major responsibilities and authorities have been assumed by the entities and the Office of the High Commissioner is currently negotiating for the transfer of additional functions. It has been the policy of the High Commissioner's office to transfer functions to the entities to the fullest extent possible.

Question: Is the budget increased to reflect a replication of functions on several entities rather than just in Saipan?

Answer: Recognizing that there are now three new governments performing functions formerly performed by one, we have tried to cover those additional operating costs in our budget requests for the three governments.

Deficits

Question: How are accumulated past year deficits being paid?

Answer: Accumulated deficits from past years are paid from current year funds.

Question: Are they being passed to the entities?

Answer: The deficit incurred by each state in a past year is covered by a reduction in the current year fund availability. The deficit is not passed per se. It is a deficit incurred by the states which must eventually be paid by them. Current year funds are reserved by state for liquidation of the deficit.

Question: What are the levels of past year deficits?

Answer: FY 1979 cummulative and annual deficit was $2.5 million for the three entities. FY 1980 cummulative deficit for the three entities was $2.4 million. There was no annual deficit for FY 1980. The three entities showed a surplus of $.1 million thus reducing the cummulative deficit to $2.4 million at the beginning of FY 1981.

Communications

Question: What is the situation on intra and inter district communications?

Answer: The TTPI headquarters is replacing all outer island radios with new equipment powered by solar units. In addition, each of the district phone centers are being renovated and expanded.

Question: What is the situation with COMSAT service?

Answer: All three entities have signed agreements with COMSAT. Currently, COMSAT's application for Palau is pending before the F.C.C. Applications for FSM and the Marshalls will be submitted when and if Palau's application is approved by the FCC.

Question: Have provisions been made with COMSAT to provide technical assistance and training to the entities in forming a communications authority and running and maintaining the system?

Answer: COMSAT will operate and maintain the satellite station and will make every effort to hire local personnel to work at the station. The entities are responsible for forming a communication authority and operating and maintaining the local phone system and the outer island radios.

College of Micronesia

Question: For the record, what are the components of the College of Micronesia?

Answer: (1) Two year Community College located in Ponape
(2) School of Nursing located in Saipan
(3) Micronesian Occupational College located in Palau
(4) Six Extension Service Centers in the Marshalls, Palau and the four states of the FSM

Question: What are the accreditation problems of each and what curriculum does each offer?

Answer: All components of the College of Micronesia have been accredited by the Accrediting Commission for Community and Junior Colleges (ACCJC), Western Association of Schools and Colleges, Aptos, California.

The accreditation problem centers on the Community College physical facilities in Ponape. The primary requirement for continued accreditation is the improvement or replacement of these facilities, including providing laboratory equipment and additions or renovation of residential dormitories.

Curricula Offered:

Community College Ponape - Associate in Arts, and Associate in Science degree. Curricula is provided in:

1. the liberal arts and sciences to provide a general basic education with an emphasis on improving communication skills in English as a foundation for success in professional training or preparation for advanced study;
2. the professional training areas of nursing, business, elementary teacher education and special education which will develop a theoretical and practical foundation for success and personal gratification in those careers;
3. in-service teacher education which will lead to professional improvement and contribute to the better education of Micronesian youth; and
4. continuing education which will provide opportunities for further intellectual and technical growth for interested individuals.

The objectives of the Community College of Micronesia are:

1. to provide two-year terminal programs in the fields of nursing, business management, elementary teacher education and special education;
2. to establish competency in the basic disciplines;
3. to prepare for further study in four-year institutions by offering liberal arts courses and a liberal arts degree;
4. to continue to assist the district/states of Micronesia in their efforts to upgrade their elementary teaching staffs through extension services;
5. to provide appropriate workshop and certificate programs when needed;
6. to offer courses in continuing education that are relevant to the needs and desires of the community-at-large in all district/states of Micronesia.

Micronesia Occupational College of Palau offers a degree in Associate Science Program. The 18 occupational departments offer one and/or two-year programs in agricultural science, air conditioning and refrigeration, appliance repair, automotive body repair, automotive mechanic technology, carpentry technology, general electronic technology, general office clerk, clothing construction and design, culinary arts, dental nursing, dining room supervision, electrical technology, heavy equipment and diesel technology, masonry technology, plumbing technology, secretarial science, small engine and outboard motor technology, and welding technology.

The division offers programs of varying length, purpose, and content in order to meet the needs of the Micronesian community in the following categories:

1. General Studies

   Courses are offered to enable students to function more effectively in their occupational areas, to participate more intelligently in community activities, and in some cases to pursue further education.

2. Occupational Education

   Courses are designed and offered in a sequential order so as to provide intensive and thorough training in mechanical, construction, business and office, and various service occupation. The objectives include preparing students for initial employment as well as upgrading persons already employed.

3. Developmental Education

   Basic courses and special services are offered to assist students in overcoming their academic or vocational deficiencies, thus enabling them to be successful in their occupational education pursuits.

4. Adult and Continuing Education

   The various activities offered during the day and evening are specifically designed for adult citizens who desire to improve their occupational, cultural, social, or professional abilities beyond their present levels. The activities include short term programs, special courses, extension programs, seminars, workshops, and conferences. Many of them are offered for credit.

School of Nursing, Saipan - Associate in Science Degree in Nursing - Curriculum basic nursing program leading to the above degree. It is comparable to a License Praticul Nursing curriculum in the U.S.

Extension Services - Curriculum and course content being offered covers most of the courses offered on the main campus of the above three components.

Question: How many students does each have and how many other students are presently outside the TTPI?

Answer:

COLLEGE OF MICRONESIA

Student Enrollment

FALL 1980

	FSM	Palau	Marshalls	Other	Total
MOC	112	127	57	0	296
CCM	108	21	7	1	137
CCMNS	9	5	0	0	14
Extension Centers*	177	12	101	0	290*
	406	165	165	1	737

*Does not include some 725 taking adult continuing education courses.

Students outside of the Trust Territory - There are over 2,000 students attending various college institutions in the mainland U.S., Guam and Hawaii.

Question: What is the current condition of the College facilities?

Answer: The Saipan and Palau facilities are in good condition. The Ponape facility is barely adequate and in need of major renovation or replacement, and requires additional dormitory space.

Question: The budget spreads funding for the operation of the college into four parts: Headquarters, Palau, the FSM, and the Marshalls. Are these funds to be earmarked? If not, what other purposes can these funds be used for? What justification exists?

Answer: Yes. The funds are earmarked for the operation of the College of Micronesia. They are not to be used for any other purpose. The justification for the funds is contained in the Trust Territory FY 1982 Budget Jusifitications.

Question: If they are earmarked, why do you propose to artificially inflate the local government operation budgets for this item?

Answer: The proposal was not to artifically inflate the local government operation budget, but to provide funds within each of their budgets in order to provide for and encourage their support of the college.

Question: Doesn't this allocation encourages inter-entity political problems on the use of the funds?

Answer: We don't believe so. The rationale was that if a unified Micronesian College was desired and is to be a viable entity the governments themselves should support the college out of funds available to them.

Marshall's Loans

Question: The long-term loan which the Marshalls Government entered into for their new powerplant represents a multi-year financial commitment. The airlines may also represent such a commitment. What are the total number of other such obligations and commitments to the TT? What are the outyear projection of cost of such obligations and commitments?

Answer: As of this time there are no other such commitments. The commitments cited here are not commitments of the TTG, but are those of the Marshall Islands Government. The total cost is approximately $21.0 million over a seven year period for the power plant, and $1.5 million for ten years for the airplanes.

Question: How are these to be financed?

Answer: Any such commitments will be financed by the government entity which enters into the commitment from whatever source of funds they have available to them.

Question: What was Interior's role in negotiating and approving such agreements, especially with foreign governments?

Answer: The Department of the Interior was not involved in negotiating the loan made to the Marshalls. The power loan was between the Government of the Marshalls and a major bank in the United Kingdom. The Departments of State and Interior were aware of the negotiations but were not directly involved since the loan was not a government to government transaction. The Government of the United Kingdom was fully aware that there was no liability on the part of the United States government in this particular transaction. Since the communication and relationship was not with a foreign government the Department had no specific role in negotiating or approving the transaction.

Power Facilities.

Question: What are the power generation needs of each area?

Answer: Total current estimated needs for all areas is approximately 29,000 KW. It is anticipated that this will increase at least 5% to 10% a year for the next few years. Current need by areas are contained in the charts following this section.

Question: What is the condition of the facilities, including transmission?

Answer: Except for the new units being installed most of the units are in poor condition and in need of overhaul. Transmission facilities are barely adequate, and need extensive repair and replacement. Details of the conditions of the units by area follow this section.

Question: What is the installed capacity?

Answer: Installed capacity all areas is 29,000 KW.

Question: What are the average and peak loads?

Answer: The average month production is 6.2 million KWH for all areas. The average monthly peak load is 1,970 KW all areas.

Question: What is the cost of power generation and what is the billing rate?

Answer: Current estimated cost of production for all areas is $0.17 to $0.20 per KWH. The average billing rate for all areas is approximately $0.06 per KWH.

Question: How is the difference financed?

Answer: The difference is financed by direct entity appropriation.

Question: How does private versus public consumption compare?

Answer: For all areas the consumption ranges between 50% to 60% for government and 40% to 50% for private and commercial.

Question: What percentage of each district's operation budget goes to fuel?

Answer: Approximately 15% of the total operating budget which includes the Judiciary, and the Legislature goes toward fuel cost for the entities. By entity the percentages are; Marshalls 15%, Palau 20%, FSM 14%.

ELECTRIC POWER GENERATION INFORMATION

TRUST TERRITORY OF THE PACIFIC ISLANDS

	Installed Capacity	Peak Loads 2/	Billing Rates	Cost of Production	% of use Private/Government
Palau	6200 KW	3150	05¢	17¢ to 20¢	Est. 50/50
Majuro	5450 KW	2500	08¢	17¢ to 20¢	Est. over 50% for Gov't.
Ebeye	1650 KW	750	08¢	17¢ to 20¢	Est. 40% for Gov't.
Ponape	5400 KW	2200 KW	3¢ up to 1000 KW 8¢ over 1000 KW	17¢ to 20¢	Est. over 50% for Gov't.
Truk	5350 KW	1900 KW	10¢ for business 6¢ for private	17¢	Est. over 50% for Gov't.
Kosrae	1400 KW	270 KW	3¢	17¢ to 20¢	Est. over 50% for Gov't.
Yap	3100 KW	1200 KW	5¢ up to 1000 KW	17¢ to 20¢	Est. over 50% for Gov't.

1/ Palau has three 500 KW Army units (on loan - these will be replaced when the 3 new 1260's are installed under the CIP program.

2/ These are estimates

PALAU DISTRICT

Number of Generating Units: Presently, there are a total of 21 power generating units in operation at the district center of Koror and three of the outlying municipalities. Generating units in Peleliu, Angaur and Ngiwal are operated one at a time for six hours everyday. Units are operated alternately between oil changes. Three 1250 KW units will be installed in Malakal power plant by September 1981 under the Capital Improvement Program.

KWH Production: The monthly average electrical power production at the Malakal power plant is 1,685,000 KWH.

C. Fuel Consumption (1979): Fuel consumed in 1979 to run below described power generating units averaged 130,000 gallons per month.

D. Fuel Costs (1979): Fuel cost in 1979 for operation of below described power generating units totaled $1,120,836.

E. Fuel Consumption (1980): Estimated monthly fuel consumption in 1980 will be 160,000 gallons.

F. Fuel Costs (1980): Estimated costs for power plants fuel in 1980 is $2,090,000.

G. Utility Rate: Electric power rate now charged in Koror is $.05 per KWH.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Malakal Power Plant	1000 KW White Superior	Unit needs complete overhaul and replacement of crankshaft, cooling system piping and radiator.
Malakal Power Plant	800 KW Caterpillar	Unit recently overhauled; require additional radiator to share with unit below.
Malakal Power Plant	800 KW Caterpillar	Unit recently overhauled; require additional radiator to share with above unit to meet required cooling temperature.
Malakal Power Plant	750 KW White Superior	Unit recently overhauled; cooling system piping and radiator need to be replaced.
Malakal Power Plant	750 KW White Superior	Unit needs complete overhaul; cooling system piping and radiator need to be replaced.
Malakal Power Plant	500 KW Caterpillar	Unit belongs to U. S. Army on loan to Palau on condition that Palau completely overhauls engine before returning unit back to Army after two years. Unit has been on line for a year already.
Malakal Power Plant	500 KW Caterpillar	Unit belongs to U. S. Army on loan to Palau on condition that Palau completely overhauls engine before returning unit back to Army after two years. Unit has been on line for a year already.
Malakal Power Plant	500 KW Caterpillar	Unit belongs to U. S. Army on loan to Palau on condition that Palau completely overhauls engine before returning unit back to Army after two years. Unit has been on line for a year already.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Airai Pump Station	200 KW Caterpillar	Unit is new and recently installed.
Airai Pump Station	200 KW Caterpillar	Unit is new and will be installed in near future.
Airai Pump Station	100 KW Cummings	Unit needs complete overhaul and will be moved to provide emergency power at a main sewage pump station in Koror.
Koror District Hospital	250 KW Caterpillar	Unit require complete overhaul and since unit cannot handles total hospital load, will be utilized at a power plant outside of District Center.
Koror District Hospital	350 KW Caterpillar	Unit obtained from military surplus source and needs complete overhaul and installation including automatic transfer switch, fuel tank and mechanical and electrical connections.
Communications Station	200 KW Caterpillar	Unit is old and needs complete overhaul.
Peleliu Power Plant	100 KW Cummings	Unit is newly overhauled.
Peleliu Power Plant	175 KW Caterpillar	Unit requires complete overhaul and replacement of alternator.

eleliu Power Plant	175 KW Caterpillar	Unit requires complete overhaul and replacement of alternator.	
ngaur Power Plant	90 KW Caterpillar	Unit needs complete overhaul.	
ngaur Power Plant	90 KW Caterpillar	Unit needs complete overhaul.	
al Power Plant	90 KW Caterpillar	unit needs complete overhaul.	
al Power Plant	90 KW Caterpillar	Unit needs complete overhaul.	

MARSHALLS

Number of Generating Unit: Presently, there are 8 power generating units installed in the Majuro power plant. Two 800 KW Caterpillar units which were surplused from Enewetak operation are in majuro awaiting installation in the proposed new power plant. Six other smaller generators are installed in various facilities in DUD area to provide emergency power. Five power generating units are installed in the Ebeye power plant. Four other smaller units are installed in various facilities in Ebeye for emergency use. Three units are installed in the Jaluit power plant, essentially to provide the Jaluit High School its power requirement.

KWH Production: The monthly average electrical power production at Majuro is 984,000 KWH and that for Ebeye is 400,000 KWH or a total of 1,384,000 KWH.

Fuel Consumption (1979): Fuel consumption in 1979 for power plants in Majuro and Jaluit averages 78,000 gallons per month and that for Ebeye is 44,000 gallons per month, or a total of 122,000 gallons per month.

D. Fuel Costs (1979): Power plants fuel costs in 1979 for Majuro and Jaluit amounted to $900,000 while that for Ebeye was $438,240, or a total of $1,338.240.

E. Fuel Consumption (1980): Average estimated power plants fuel required for Majuro and Jaluit is 80,000 gallons per month and that for Ebeye is 59,400 gallons, or a total of 139,400 gallons per month.

F. Fuel Costs (1980): Fuel for power plants in Majuro, Ebeye and Jaluit in 1980 is estimated to cost $2,040,816.

G. Utility Rate: Both Majuro and Ebeye presently charges customers $.08 per KWH of electrical energy consumed.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Majuro Power Plant	1000 KW White Superior	Unit presently down due to a broken cylinder head. Unit undergoing repair at the present. Unit overhauled less than a year ago.
Majuro Power Plant	750 KW White Superior	Unit in running condition and overhauled less than a year ago.
Majuro Power Plant	750 KW Baldwin	Unit in running condition and overhauled less than a year ago.
Majuro Power Plant	750 KW Baldwin	Unit presently down due to problem with alternator; needs complete overhaul.
Majuro Power Plant	300 KW Cleveland	Unit in running condition.
Majuro Power Plant	300 KW Cleveland	Unit in running condition.
Majuro Power Plant	300 KW Cleveland	Unit presently down due to problem with alternator.
Majuro Power Plant	500 KW Caterpillar	Unit presently down due to problem with alternator. Existing alternator needs replacement.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Majuro Power Plant	800 KW Caterpillar	Unit is surplus from Enewetak and now stored at Majuro power plant yard. Unit will be installed in proposed new power plant.
Majuro Power Plant	800 KW Caterpillar	Unit is surplus from Enewetak and now stored at Majuro power plant yard. Unit will be installed in proposed new power plant. The rest of unit described above will also be relocated in the new proposed power plant. It is anticipated that new piping for cooling, fuel and air systems as well as new radiators and certain electrical system components will also be replaced.
Majuro Hospital	150 KW Caterpillar	Unit has been recently overhauled.
Majuro Water System	75 KW Caterpillar	Unit has been recently overhauled.
Communications (Receiver Site)	100 KW Caterpillar	Unit is in good operating condition.
Majuro Airport	150 KW Caterpillar	Unit is in good operating condition.
Majuro Broadcast Station	30 KW Caterpillar	Unit is in good operating condition.
Communications (Transmitter Site)	30 KW Caterpillar	Unit is in good operating condition.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Ebeye Power Plant	600 KW Caterpillar	Unit is new and was intalled about six months ago.
Ebeye Power Plant	600 KW Caterpillar	Unit in operation and was overhauled about six months ago.
Ebeye Power Plant	500 KW Caterpillar	Unit is only one year old but presently down due to problem in the electrical system.
Ebeye Power Plant	350 KW Caterpillar	Unit being overhauled and waiting for voltage regulator.
Ebeye Power Plant	350 KW Caterpillar	Unit being overhauled and waiting for radiator fan motor.
Sewage Treatment (Ebeye)	75 KW Caterpillar	Unit is in good operating condition.
Ebeye Hospital	35 KW Caterpillar	Unit is down and need complete overhaul. Unit is too small for hospital emergency need.
Ebeye Hospital	45 KW Caterpillar	Unit needs overhaul. Unit is too small for hospital load.
Ebeye Hospital	100 KW Caterpillar	Unit acquired as surplus from Kwajalein but not yet installed at hospital.
Jaluit Power Plant	300 KW Cleveland	Unit needs complete overhaul.
Jaluit Power Plant	300 KW Cleveland	Unit needs complete overhaul.
Jaluit Power Plant	175 KW Caterpillar	Unit needs complete overhaul.

PONAPE STATE

A. Number of Generating Units: Presently, there are 11 power generating units in operation in Ponape. Two other units which are mobile and specifically used for providing emergency power to the sewage treatment plant and sewage pump station are down with electrical problems. There are two power plants in operation in Ponape today. The new power plant at Nanphonmal will be the ultimate plant. Units presently at the old power plant at Kolonia will be moved one at a time, relocated in the Nanphonmal power plant, overhauled and installed.

B. KWH Production: The monthly average electrical power production at both power plants totals 1,320,000 KWH.

C. Fuel Consumption (1979): Fuel consumption in 1979 for operating the power generating units described below average 122,800 gallons.

D. Fuel Costs (1979): Fuel costs in 1979 for operating the generating units described below totaled $1,208,352.

E. Fuel Consumption (1980): Estimated montly fuel consumption in 1980 for all power generating units averages 130,000 gallons.

F. Fuel Costs (1980): Estimated costs for power plants fuel in 1980 amounts to $1,903,200.

G. Utility Rate: electrical power rate presently charged in Ponape is $.03 per KWH.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Nanphonmal Power Plant	800 KW Caterpillar	Unit in operating condition and does not need immediate improvements.
Nanphonmal Power Plant	800 KW Caterpillar	Unit being operated on only 15 cylinder because of crankshaft journal damage. Unit needs complete overhaul and crankshaft replaced with new one.
Nanphonmal Power Plant	800 KW Caterpillar	Unit is down due to damaged crankshaft. Unit needs complete overhaul and crankshafts and other components should be replaced with new ones. The following installations must be done to this and the two above units to correct existing electrical problems inherent in the design of system: Convert existing 3 Kato 300 KWH generators from brush type static exciters to rotary brushless exciters with Basler SR8 type voltage regulators; convert 3 Caterpillar engines from electronic governors to Woodward UG8 dial type governors; remove all transformers in switchgear and rewire panels for the new controls supplied; remove all protective relays and have them factory calibrated and install back.
Kolonia Power Plant	750 KW White Superior	Unit needs to be relocated in the Nanphonmal power plant and overhauled. Cooling system needs to be replaced. Unit now in operation at Kolonia power plant.
Kolonia Power Plant	750 KW White Superior	Unit needs to be relocated in the Nanphonmal power plant and overhauled. Cooling system needs to be replaced. Unit now in operation at Kolonia power plant.
Kolonia Power Plant	500 KW Caterpillar	Unit is in operation but needs complete overhaul and cooling system replacement. Unit will be relocated in the Nanphonmal power plant.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Kolonia Power Plant	500 KW Caterpillar	Unit presently down due to piston and cylinder liner damages. Unit presently undergoing repair. Unit will be moved to Nanphonmal power plant.
Kolonia Power Plant	500 KW Caterpillar	Unit presently down due to problem with alternator. A new alternator is needed to replace existing one.
Hospital	500 KW Caterpillar	Unit in operating condition, however, needs engine top part overhaul. An automatic transfer switch is needed for this unit.
Communications	100 KW Caterpillar	Unit in operating condition, however, needs engine top overhaul.
Airport	50 KW Caterpillar	Unit in operating condition, however, needs engine top overhaul.
Sewer System (Mobile Unit)	125 KW Allis-Chalmers	Unit needs to be overhauled; electrical problems with voltage regulator and alternator.
Sewer System (Mobile Unit)	125 KW Allis-Chalmers	Unit needs to be overhauled; unit has electrical problems details of which not known at present.

YAP STATE

A. Number of Generating Units: Presently, there are 15 power generating units in operation at the state center of Colonia and at Ulithi In Colonia, power is in operation 24 hours per day whereas in Ulithi, operation of the power plant depends upon the amount of fuel available and whether or not power is needed 24 hours for protection of frozen food items for the Yap Outer Islands High School.

B. KWH Production: The monthly average electrical power production at Colonia power plant at present is 595,800 KWH.

C. Fuel Consumption (1979): Fuel consumed in 1979 for operating the power generating units described below averaged 49,000 gallons per month.

D. Fuel Costs (1979): Fuel costs in 1979 for the operation of below described power generating units totaled $634,042.

E. Fuel Consumption (1980): Estimated monthly fuel consumption in 1980 for all power generating units is 51,093 gallons.

F. Fuel Costs (1980): Estimated costs for power plants fuel in 1980 amounts to $705,083.

G. Utility Rate: Electrical power rate presently charged in Colonia is $.05 per KWH.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Colonia Power Plant (New)	800 KW Caterpillar	New unit installed in December 1979.
Colonia Power Plant (New)	800 KW Caterpillar	New unit installed in December 1979.
Colonia Power Plant (New)	750 KW White Superior	Unit had engine top part overhaul less than a year ago.
Colonia Power Plant (New)	750 KW Caterpillar	Unit had engine top part overhaul less than a year ago.
Colonia Power Plant (Old)	600 KW Caterpillar	Unit needs complete overhaul.
Colonia Power Plant (Old)	350 KW Caterpillar	Unit engine needs complete overhaul and alternator needs to be replaced.
Colonia Power Plant (Old)	350 Caterpillar	Unit is too old and may be uneconomical to repair.
Hospital	200 KW Allis-Chalmers	Unit is newly installed and is only used for emergency purposes.
Communications (Transmitter Site)	60 KW Caterpillar	Unit in good condition and is used only when island power is out.
Communications (Receiver Site)	50 KW Caterpillar	Unit in good condition and is used only when island power is out.
Broadcast Station	50 KW Caterpillar	Unit is newly installed.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Ulithi	150 KW Caterpillar	Unit needs complete overhaul.
Ulithi	150 KW Caterpillar	Unit needs complete overhaul.
Ulithi	60 KW Caterpillar	Unit needs complete overhual.
Ulithi	50 KW Caterpillar	Unit needs complete overhual.

TRUK STATE

A. Number of Generating Units: Presently, there are 12 power generating units in operation at the state center of Moen and two units installed on Dublon Island, but not in operation. Seven of the twelve units are installed at the Moen power plant and the rests are located in various facilities to provide emergency power.

B. KWH Production: The monthly average electrical power production at Moen power plant at present is 980,000 KWH.

C. Fuel Consumption (1979): Fuel consumed in 1979 for operating the power generating units described below averaged 70,083 gallons per month.

D. Fuel Costs (1979): Fuel costs in 1979 for operating the power generating units described below amounted to $983,970.

E. Fuel Consumption (1980): The estimated monthly fuel consumption in 1980for operating the power generating units described below averages 81,700 gallons.

F. Fuel Costs (1980): Estimated costs for power plants fuel in 1980 amounts to $1,195,600.

G. Utility Rate: Electrical power rate presently charged in Moen is $.04 per KWH.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Moen Power Plant	1150 KW Nordberg	Unit is presently down with alternator problem. Unit needs complete overhaul and replacement of radiator.
Moen Power Plant	800 KW Caterpillar	Unit is newly installed.
Moen Power Plant	800 KW Caterpillar	Unit is newly installed.
Moen Power Plant	800 KW Caterpillar	Unit is in operation, however, needs a complete overhaul.
Moen Power Plant	800 KW Caterpillar	Unit is in operation, however, needs a complete overhaul.
Moen Power Plant	600 KW Caterpillar	Unit is in operation, however, needs a complete overhaul.
Moen Power Plant	500 KW Caterpillar	Unit is in operation, however, needs a complete overhaul.
Dublon Power Plant	175 KW Caterpillar	Unit is not in operation at present. System needs electrical repair, however, engine is in operating condition.
Dublon Power Plant	175 KW Caterpillar	Unit is not in operation at present. System needs electrical repair, however, engine is in operating condition.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Hospital	500 KW Caterpillar	Unit needs complete overhaul; automatic transfer swtich needs to be replaced.
Sewage Treatment Plant	50 KW Caterpillar	Unit is new, however, it is too small to handle the total load at th sewage treatment plant.
Airport	50 KW Caterpillar	Unit is being installed under the airport construction contract.
Communications (Transmitter Site)	75 KW Caterpillar	Unit is in operating condition.
Communications (Receiver Site)	75 KW Caterpillar	Unit is in operating condition.

KOSRAE STATE

A. Number of Generating Units: Presently, there are 8 power generating units in Kosrae. Two 400 KW Caterpillar units which have been recently installed at the Tofol power plant provide the prime power for the island. Two 300 KW white Superior are presently located in the Tofol power plant but not installed. A 350 KW Caterpillar installed in Tofol power plant is down due to mechanical failure. A 200 KW Caterpillar is located in Lelu power plant and a 90 KW Caterpillar and 125 KW Caterpillar are located at the hospital.

B. KWH Production: The monthly average electrical power production at the Tofol power plant at present is 216,000 KWH.

C. Fuel Consumption (1979): Fuel consumption in 1979 averaged 19,700 gallons per month.

D. Fuel Costs (1979): Power plant fuel costs in 1979 amounted to $196,212.

E. Fuel Consumption (1980): Fuel consumption in 1980 is estimated at 23,000 gallons per month.

F. Fuel Costs (1980): Fuel for power plants is estimated to cost $339,480 in 1980.

G. Utility Rate: Kosrae presently charges customers $.035 per KWH of electrical energy consumed.

Unit Location	KW Rating/ Generator Make	Improvements Required/Remarks
Tofol Power Plant	400 KW Caterpillar	Unit is newly installed under Capital Improvement Program. Unit has been in operation since June 1980.
Tofol Power Plant	400 KW Caterpillar	Unit is newly installed under Capital Improvement Program. Unit has been in operation since June 1980.
Tofol Power Plant	350 KW Caterpillar	Unit is presently down due to mechanical failure. Repair of unit require engine block and crankshaft replacements.
Tofol Power Plant	300 KW White Superior	Unit presently located in power plant but not installed. Unit was purchased new and has been in storage for over eight years. All major components are available, but need to be checked prior to installation of unit.
Tofol Power Plant	300 KW White Superior	Unit presently located in power plant but not installed. Unit was purchased new and has been in storage for over eight years. All major components are available but need to be checked prior to installation of unit.
Lelu Power Plant	200 KW Caterpillar	Unit has been recently overhauled and is used for emergency purposes only.
Hospital	125 KW Caterpillar	Unit in operating condition but needs to be overhauled.
Hospital	90 KW Caterpillar	Unit in operating condition but is too small for the hospital load.

NORTHERN MARIANAS FINANCIAL CONDITION

Senator McClure. Mrs. Van Cleve, what is the present financial condition of the Northern Marianas?

Mrs. Van Cleve. It has an accumulated deficit of just under $4 million.

Senator McClure. Are you satisfied that fiscal year 1982 request of $23.9 million will meet their needs adequately?

Mrs. Van Cleve. Yes.

Senator McClure. Including the accumulated deficit?

Mrs. Van Cleve. It is not clear to me that the accumulated deficit would be eliminated as a consequence of the funding in fiscal 1982, but we do believe the sum we have sought is appropriate.

Senator McClure. You don't think the accumulated deficit will get larger?

Mrs. Van Cleve. No; we do not.

What we have from the Northern Marianas is represented as a balanced budget.

Senator McClure. What percentage of the overall Northern Marianas' budget goes to fuel?

Mrs. Van Cleve. Approximately 27 percent of the operations budget.

Senator McClure. How does this compare with the first year of covenant funding?

Mrs. Van Cleve. It would be vastly less in the first year. We don't have that figure. We can provide it for the record.

[The information follows:]

Northern Mariana Islands Fiscal Year 1978 Fuel Costs

In fiscal year 1978, $16,782,309 was obligated for operations, of this amount, $2,088,200, or 12.44 percent, was obligated for fuel.

NORTHERN MARIANAS/GUAM HEALTH CARE FACILITIES

Senator McClure. In meeting the health care needs of the Marianas, is there sufficient integration with the health facilities available in Guam?

Mrs. Van Cleve. The plan that I referred to earlier, in which the Governor and his people are working with representatives of HHS and Interior, contemplates appropriate transfers between Guam and the Northern Marianas so as to avoid duplication.

I think the plan is not sufficiently complete for us to be more definite than that, but we're certainly mindful that we don't want to have any doubling up that can be avoided.

Senator McClure. We want to be certain that there are sufficient health care facilities for the people of the Northern Marianas.

We recognize certainly that people like to be cared for close to their homes and near their families. At the same time, we also recognize that we cannot always provide separate facilities in every separate location. Some of the critical specialized care simply has to be centralized in larger facilities. Better care can be done more expeditiously and a lot more inexpensively.

So, we are concerned about whether the facilities in the Northern Marianas will be adequate and whether they will be adeuqately coordinated with those in Guam, where the facilities are obviously much better.

PAGAN VOLCANO ERUPTION

What is the situation on Pagan? Are all the people safe?

Mrs. VAN CLEVE. They are.

Senator MCCLURE. What relief efforts are underway?

Mrs. VAN CLEVE. I am not sure that we know. We do know that the people of Pagan have all been moved to Saipan and that the Red Cross and the local government are undertaking relief effort, but I cannot tell you precisely what they are. We can seek that and provide it to you.

Senator MCCLURE. Would you give me an estimate of how soon you think they might be able to move back?

Mrs. VAN CLEVE. I think we do not know. I am informed it is not clear when Pagan can again be used.

Senator MCCLURE. Is it unclear because of the continuing situation?

Mrs. VAN CLEVE. Yes; I think there are still trickles of lava, as I understand it, so I don't think anybody has made anything like a definitive assessment as to what it's going to look like in due course.

Mr. DeYoung has something to add to this.

And here is Mr. Pangelinan, who doubtless does.

Mr. DEYOUNG. I was going to say, Mr. Chairman, that Mr. Pangelinan, who is here, probably has the most up-to-date information.

A reconnaissance trip took place to Pagan a few days ago in which a group of islanders went back with relief authorities from Saipan and took off all the livestock which had had to be abandoned. Most of the livestock was still alive. A lot of the crops, of course were destroyed. The houses and roads are covered with ash.

It's questionable at the moment just when the island might be again usable from an agricultural point of view.

And Mr. Pangelinan probably can amplify on that either now or this afternoon, as you desire.

Senator MCCLURE. Why don't you just respond to that at this time, Mr. Pangelinan.

Mr. PANGELINAN. Thank you, Mr. Chairman.

The situation in Pagan is under control at the present time. The number of people is 54—residents who were successfully evacuated to Saipan.

Just recently, last week, we had some of the residents return to Pagan to take care of their belongings there.

There is some concern over the volcanic activity. We have the U.S. Geological Survey team on the island assessing the situation there. And its advice was that the residents not return because there might be another potential eruption of the volcano. The island has been declared a disaster area by the Governor.

We have a team on the island assessing the total damage. It's a significant eruption on the island, the first major eruption in 100 years.

At the present time, the island is covered with volcanic ash, very similar to the Mount St. Helens situation. One part of the runway, which is the only one accessible by air, is covered by 25 feet of volcanic rocks and ash. At the present time we are putting the island off limits to other residents so that we can control it, monitor it. And because of the potential eruption, we want to make sure that no future life will be threatened. We would be very happy to keep the committee informed of the assessment of the island.

Senator McClure. Do that.

I gather the impression that conditions are not stabilized there well enough for us to be able to make an assessment of what will be necessary?

Mr. Pangelinan. Yes; we have a team on the island now making an assessment.

Senator McClure. If you will provide us some information when that is completed, we would very much appreciate it.

Mr. Pangelinan. We'll be very happy to, Mr. Chairman.

Thank you.

Senator McClure. Thank you.

TINIAN DEFENSE OPTION

What is the status of the defense option on Tinian and Farrallon de Medinilla?

Mrs. Van Cleve. The Defense Department has budgeted in fiscal 1982 for the exercise of that option.

Senator McClure. So that nothing is—there is nothing yet underway, no progress report that can be given?

Mrs. Van Cleve. Nothing is underway, other than the appropriation process which will decide whether Defense can, in fact, take over that portion of Tinian identified in the covenant.

NORTHERN MARIANAS SUPER PORT FACILITY

Senator McClure. What's the prospect for a super port oil storage transshipment facility in the Marianas?

Mrs. Van Cleve. Maybe, again, Mr. Pangelinan can speak to that better than we. It's a project that surfaces from time to time. There are occasionally entrepreneurs who are interested in a super port facility in the Northern Marianas. Most recently such entrepreneurs identified areas that were not feasible from the standpoint of the Northern Marianas' Government. One was on Tinian, and the other was near the airport on Saipan.

We've heard nothing more on the subject of super port for the last couple of months, but it's a question that's constantly arising.

Senator McClure. He will have an opportunity this afternoon to go fully into it from the standpoint of the local government.

What position does the Interior have with respect to it?

Mrs. Van Cleve. We have no position at the moment on any particular project, because there is no particular project proposed.

But our general disposition is one of encouraging economic development in whatever form it appears, so long as it is reasonably compatible with environmental considerations.

PROPOSED OCEAN THERMAL ENERGY CONVERSION FACILITY

Senator McClure. I understand the Marianas has recently responded to a project opportunity notice for an OTEC facility in Saipan. Can you provide us details of the proposal?

Mrs. Van Cleve. I think we would prefer to do that for the record. We would prefer to do that.

Senator McClure. Does Interior have a position? Or will you state that in your report?

Mrs. Van Cleve. We have been supportive of such efforts in the past, and I feel quite confident we will be the next time around.

[The information follows:]

OTEC Facility

The Government of the Northern Mariana Islands has responded to a Department of Energy program opportunity notice on a closed cycle ocean thermal energy conversion (OTEC) pilot plant of 10 megawatts on February 26, 1981. Discussions with DOE are ongoing.

SUPER PORT FACILITY

Senator McClure. Have you been in communication with the Department of Energy?

Mrs. Van Cleve. Yes; some of our people have discussed this with DOE people.

Senator McClure. With respect to the super port facility, it would have an impact on not just the Northern Marianas, would it not?

Mrs. Van Cleve. It could be expected to have a very much wider impact; yes. Surely Guam would be affected, one would think.

Senator McClure. Wouldn't it affect the status of Yap and Palau defense concerns?

Mrs. Van Cleve. It might.

Senator McClure. Certainly it would greatly increase the tanker traffic in that immediate area, would it not?

Mrs. Van Cleve. It would seem to, yes. In the absence of a particular proposal, it's a little hard to respond. But all of those conclusions seem reasonable.

Senator McClure. It would seem to me it would heighten the Interior's concern about it, as well as interest in looking at the general proposition of economic development.

Mrs. Van Cleve. I think that's reasonable, too.

Senator McClure. Because it has impact not just in the area where economic development would occur, it has impact upon other areas for which you have responsibility.

Mrs. Van Cleve. Quite right.

NMI DOCK AND HARBOR REPORT

Senator McClure. What is the status of the Dock and Harbor Needs Report for the Northern Marianas?

Mrs. Van Cleve. We have contracted with an expert from the Corps of Engineers to do work for us. And we expect to produce that report on time.

Senator McClure. It's not yet ready?

Mrs. Van Cleve. No, it is not. But I think it's not due until the 24th of June, I am told—I'm sorry. If I may correct—my colleagues tell me we do have the report prepared and it's being reviewed, and we do expect to meet the deadline.

Senator McClure. All right.

NMI MISUSE OF CAPITAL IMPROVEMENT FUNDS

The February 1981 audit indicated $4.4 million of capital improvement funds were used for noncapital items. What was the response of the Northern Marianas Government?

Mrs. Van Cleve. I don't know that we have one. May we look into this and supply a response for the record.

Senator McClure. If you would.

[The information follows:]

NMI Misuse of CIP Funds

The Government of the Northern Mariana Islands does not believe that A-102 drawdown restrictions apply to covenant grants. The covenant does not address the use of CIP funds to temporarily support operational activities such as Federal programs. The NMI believes that the alleged misuse of CIP funds was, in fact, temporary interfund borrowing, and that no restrictions apply.

MISSPENDING OF FUNDS

Senator McClure. What steps have you taken to insure that funds are properly spent?

Mrs. Van Cleve. Essentially our Comptroller makes reports and makes the results known. The kind of pressure that results from that kind of auditing is one of our responses, in addition to the extent that the misspending in the Northern Marianas has resulted from imperfect knowledge as to what's going on. The earlier description by Mr. Novick of our technical assistance efforts in the accounting area should be very helpful.

Senator McClure. Are you suggesting they misspent because they didn't know what they were spending?

Mrs. Van Cleve. I think that's entirely possible.

Senator McClure. What is the fact? All things are possible, I guess.

Mrs. Van Cleve. I think I can't tell you why they misspent without reciting the conclusions of the Comptroller's report. And we can give you a summary of that at this point in the record.

I do think misinformation, however, has unquestionably contributed to it.

Senator McCLURE. If you would provide that summary for the record, we would be interested. We would also be interested in knowing what steps you are taking to avoid a repetition, other than simply giving them the means to have better information. That may be too easy an answer, to simply assume that they just did it through inadvertance because they didn't know, and now that they can keep track of it better they won't make the error again.

[The information follows:]

NMI MISUSE OF CIP FUNDS

The summary from the Comptroller's report is attached. Through our efforts in financial management technical assistance and training, we hope to avoid a repetition of any misuse of funds.

PART II—SUMMARY

As illustrated by the following conditions, the NMI had not established sufficient controls to insure that capital improvement funds would be used in accordance with the general intent of the covenant.

Contrary to a condition of the various grant awards, the NMI has knowingly drawndown, from the U.S. Treasury, capital improvement funds in excess of immediate cash needs. Furthermore, as of August 31, 1980 the NMI's accounting records indicate that $4.4 million of these funds were charged to the NMI's operation account and/or other Federal programs and were presumedly used for those activities in violation of the covenant. (Statement of conditions and recommendations (SOCAR-1)).

The NMI had not developed a definition for capital improvement projects to facilitate an effective and efficient means of planning for the use of capital improvement funds made available through the covenant. As a result, these funds were appropriated by the NMI Legislature and used for activities and/or items which did not appear to be related to capital improvement. (SOCAR-2).

The NMI had not established annual budgetary appropriations on a timely basis, and when established, the appropriations did not make reference to specific projects or activities that would be implemented with capital improvement funds. Consequently, some of these funds were used for activities not identified under the NMI's planning and budgetary process. (SOCAR-3).

An exit conference was held with officials of the NMI executive branch on November 19, 1980. Subsequently, they provided us with written comments relative to the conditions included in this report. While they generally concurred with the conditions, they did not always concur with our conclusions and recommendations. Their comments, as appropriate, have been excerpted and included in the applicable SOCAR.

TURNING AWAY FROM AGRICULTURE

Senator McCLURE. On page 157 of the justification you indicate just half of 1 percent of the land area is under cultivation and over 60 percent of the arable land is unused. Why?

Mrs. VAN CLEVE. Are you referring to the Northern Marianas?

Senator McCLURE. Yes.

Mrs. VAN CLEVE. I don't know the answer. There has been a visible turning away from agriculture in all of the territories. Really, since the days of World War II, it is simply not regarded as an attractive pursuit, and that is unquestionably a part of the reason.

Senator McCLURE. An attractive pursuit in comparison to alternatives, or an attractive pursuit period?

Mrs. VAN CLEVE. Surely the former; perhaps the latter, as well.

Senator McCLURE. Are any steps being taken to change this situation? Or is Interior of the opinion that that is a desirable change?

Mrs. VAN CLEVE. This is not the kind of thing that Interior, as such, would do. Each of the territorial governments has some kind of agricultural program. I think most observers over the years would have regarded them as not achieving the kind of successes that anyone would hope for.

Senator McCLURE. Let me call attention to what I think may be an error in your justification. On page 157 of your budget justification you say in the first paragraph under agriculture, currently only about 536 acres of the land are under cultivation. I just wonder if that is an accurate figure.

Mrs. VAN CLEVE. We will certainly check the statistic and correct it for the record, if it needs it.

Senator McCLURE. Well, in view of the agricultural development on Tinian, I would be inclined to believe the total figure must be in error.

Mr. GALLAGHER. Actually, the agriculture on Tinian is more of the cattle ranch than agriculture.

Senator McCLURE. Sure, it is a cattle ranch, but there is cultivation.

Mr. GALLAGHER. I would just like to point out one thing, Mr. Chairman. The justification for the Marianas budget in the year was prepared by the Northern Marianas Government, so these figures and these writeups basically are their product. But we will check the figures.

[The information follows:]

ACRES UNDER CULTIVATION

According to information furnished by the Northern Mariana Islands, there are 600 acres under cultivation.

ADDITIONAL COMMITTEE QUESTIONS

Senator McCLURE. I am not as expert on the Northern Marianas as you are, but I visited the ranch on Tinian and I would question that figure. It may be correct.

We have some additional questions for the record.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

POWER FACILITIES

Question. What are the power generation needs of the NMI?

Answer. For fiscal year 1981, 29,000 KW.

Question. How is power presently supplied?

Answer. On Saipan, three new 7,200 KW units which burn heavy fuel oil at the new powerplant. Four diesel generators with a total capacity of 7,400 KW in the existing standby powerplant on Saipan.

Question. What is the condition of the facilities including transmission?

Answer. The new powerplant is in good condition. Standby units are in fair condition. Transmission lines are poor. Wires are corroded, hardware is old and difficult to replace, and poles are rotting.

Question. What is the installed capacity?

Answer. On Saipan, 29,000 KW.

Question. What are the average and peak loads?

Answer. The 1981 average monthly load is 12,100 KW. The average monthly peak load is 16,500 KW.

Question. What is the cost of power generation and what is the billing rate?

Answer. The cost of power generation is 14 cents per KWH. The billing rate average for all customers is approximately 6 cents per KWH.

Question. How is the difference financed?

Answer. The difference is financed by a direct appropriation from the Northern Marianas general fund.

Question. How does private versus public consumption compare?

Answer. TTPI Government 15 percent, NMI Government 25 percent; commercial 50 percent; residential and private 10 percent.

FEDERAL HIGHWAY PROGRAM FOR GUAM

Senator McCLURE. With respect to Guam, the administration has requested $3.2 million for bridge reconstruction. What efforts have you made to include Guam under the Federal Highway Administration's bridge replacement program?

Mrs. VAN CLEVE. I think I suggested earlier, our assessment is that Guam would not be entitled to more than a small fraction of that $3-plus million that we are seeking in this budget, under that Federal grant program.

Senator McCLURE. Even if they were fully included under it?

Mrs. VAN CLEVE. That's my understanding, yes.

Senator McCLURE. Could you provide—can you provide the figure and the supporting data for that conclusion?

Mrs. VAN CLEVE. We will be glad to.

[The information follows:]

BRIDGE RECONSTRUCTION PROGRAM

As a territory, Guam does not qualify for assistance under the FHWA bridge replacement program. The territory does receive allotments totaling approximately $2.5 million annually from FHWA under the territorial highway program portions of which Guam has in previous years used for bridge reconstruction.

PRIORITY LIST

Senator McCLURE. What priority would you assign to the various projects if full funding is provided?

Mrs. VAN CLEVE. We would defer to the judgment of the Governor, and his judgment is reflected in the order in which the projects are set out in the budget justifications.

Senator McCLURE. So that is a priority list in the justification?

Mrs. VAN CLEVE. That's correct, yes.

Senator McCLURE. Do you anticipate that Guam will have a balanced budget or a deficit in fiscal year 1982?

Mrs. VAN CLEVE. The best guessing at the moment by our economist in our office, in consultation with the Governor, is that in fiscal year 1982 Guam may have a balanced budget and it may, therefore, succeed in reducing its accumulated general fund deficit somewhat. That's obviously a prediction; nothing certain yet.

GUAM DEFICIT ELIMINATION PLAN

Senator McCLURE. What is the status of the deficit elimination plan required under Public Law 96–597?

Mrs. VAN CLEVE. The Governor has submitted an initial proposal to us. He did so last month. This is in response to the requirement of the deficit elimination section of the recently enacted law. As you will have recognized, the administration's budget request does not include funds for the deficit elimination program. However, the Governor has nonetheless submitted a proposal to us. We are in the process now of consulting with the Treasury Department, as the statute requires.

We have also proposed a letter that was probably not yet received by Governor Calvo, suggesting some areas by which we think the Guam proposal should be improved. So in sum, we do not yet have a plan from the Governor that we can recommend that the Secretary of the Interior approve, but it is in process.

Senator McCLURE. When do you expect it might be completed?

Mrs. VAN CLEVE. With the understanding that it's a guess only, it is entirely possible that this could occur by August or September. In any event, early enough for funding in fiscal 1982. But as I noted, we have not sought funds for this purpose.

Senator McCLURE. If it isn't available until August or September, we will have the fiscal 1982 budget completed. So we are talking then about fiscal 1983, rather than fiscal 1982, unless you have a reprograming or supplemental.

Mrs. VAN CLEVE. I think the Governor's proposal does not need to be submitted to the Congress as a prerequisite for obtaining that money. It needs to be submitted to the Secretary and approved by the Secretary as a prerequisite for getting money. My guess is that that could occur before fiscal 1982 begins.

Senator McCLURE. Would you provide us with a status report on that by mid-September?

Mrs. VAN CLEVE. Yes; we will do that.

Senator McCLURE. If you will, please?

ADDITIONAL COMMITTEE QUESTIONS

I have a number of detailed questions about specific facility needs, which I will submit for the record, if you will provide answers for the record.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Guam Power Authority

Question: What is the current financial condition of the Guam Power Authority?

Answer: The initial result of the rate increase and renegotiation of the Power Pool Agreement was salutary; after three years of net losses including a FY 1979 net loss of $3,146,112,000, the GPA recorded a net income for FY 1980 of $3,238,728. However, concurrent with the implementation of base rate increase, fuel oil prices rose 160%, from $12 per barrel to $31 per barrel in August 1980. These fuel cost increases were passed through to consumers and far outstripped the base rate increases. (A typical bill rose from $62 in June 79 to $92 in June 80.)

The result was a marked decline in consumption and a like decline in revenue. GPA now forecasts projected FY 1981 sales of 455,000,000 KWH which represents a decline in sales of 19,000,000 KWH and 4% from FY 1980 and a decrease of 65,000,000 KWH or 12% from the prior forecasts. If this be the case into the future, net operating revenues available for debt service will decrease from $10,686,000 (or 1.8 coverage) in FY 1980 to $4,478,000 (or 0.65 coverage) in FY 1985.

Question: What are the current prospects for repayment of the bonded indebtness under federal guarantee?

Answer: Based on the conclusions drawn above, the prospects for repayment of the $36 million loan guarantee by GPA are very uncertain.

Question: What is the current status of the EPA requirement that GPA install a scrubber system?

Answer: The Clean Air Act applies to Guam, and sections 111 and 123 of the Act would require the coal-and oil-burning power plants of Guam to meet certain emission standards. Both conventional scrubber systems and an experimental seawater scrubber system have been suggested as possible ways of meeting these standards. The systems would be very costly, and the Government of Guam questions whether the cost is justified by the largely intangible benefits that might result. The Guam Power Authority and the Government of Guam point out that (1) Guam's air quality exceeds National Clean Air standards; (2) emissions from the power plants are carred by constant winds over the uninhabited Phillipine Sea; (3) sludge from conventional scrubbers and sulphur dioxide from seawater scrubbers pose environmental problems in dispersion of emission; and (4) Guam ratepayers should not be forced to pay for negligible benefits through sizable rate increases. The Administrator of the Environment Protection Agency has met with Governor Calvo and understands Guam's concern. The Administration will be reviewing all aspects of the Clean Air Act and we (TIA) will be involved to promote Guam's interests.

Question: What will be the cost of the system and the impact on GPA's financial condition?

Answer: Installation of such a sea water scrubber for Cabras 1 and 2 requires borrowing of at least $12 million in construction costs, and its operation would increase annual operating costs substantially.

Compliance with certain provision of the Clear Water Act for the Tanguisson will cost between 5 and 15 million.

Question: What are the air quality benefits from the system?

Answer: For Guam, it appears that there will be no air quality benefits.

Question: If the federal government will wind up underwriting the cost of the pollution abatement technology, has a policy judgment been made whether it would be preferable to exempt GPA from stateside standards or underwrite abatement technologies?

Answer: No decision has been made in this case. It is hoped that we can make the application of the Clean Air Act more reasonable, rather than financing its effect in places where it does not apply as reasonably as it should.

Question: What are the power generation needs of Guam?

Answer: Operational estimates for FY 1982 are 284,000 KW.

Question: How is power presently supplied?

Answer: Number and type of units

Actual
FYs 1979, 1980, 1981

Steam Turbo Generators:			Steam Turbo Generators:		
Qty	Capacity	Total	Qty	Capacity	Total
2	66,000	132,000 KW	2	66,000	132,000 KW
2	26,500	53,000 KW	2	25,600	53,000 KW
2	22,000	44,000 KW	2	22,000	44,000 KW
2	11,500	23,000 KW	2	11,500	23,000 KW
1	30,000	30,000 KW			
9		282,000 KW	8		252,000 KW

Diesel Generators:			Diesel Generators:		
Qty	Capacity	Total	Qty	Capacity	Total
20	600	12,000 KW	20	600	12,000 KW
8	2,500	20,000 KW	8	2,500	20,000 KW
28		32,000 KW	28		32,000
37		314,000 KW	36		284,000 KW

Question: What is the condition of the facilities, including transmission?

Answer: The condition of the Navy owned generating units which are operated by GPA and provide 133,000 KW of the current rated capacity of 314,000 KW are in relatively fair operating condition. However, most of the Navy units are over ten years old and are much less efficient in production and fuel usage than Cabras Islands 1 and 2 66,000 KWH units. The other GPA units are in good condition.

We were informed by GPA management that over sixty percent of the overhead primary distribution system is in moderate to severe need of repair or replacement. The underground distribution system is even in worse condition. Almost all of the direct buried cable system needs to be replaced due to termite infestation and corrosive soil conditions.

An aggressive program to replace rotten wooden poles, rusted out hardware, and termite damaged underground cables is being pursued, but the magnitude of the problems caused by the corrosive environment, unyeilding vegetation, and termites ensures the continued emphasis on line maintenance and pole replacement.

Question: What is the installed capacity?

Answer: Current installed capacity is 314,000KW.

Question: What is the average and peak load?

Answer: Average monthly peak demand for FY 1981 is 143,317 KW. Average monthly demand is 84.9 million KWH for FY 1981.

Question: What is the cost of power generation and what is the billing rate?

Answer: Estimated cost of power generation for FY 1981 is $0.14 per KWH. Estimated average billing rate for FY 1981 for all customers is $0.13 per KWH.

Question: How is the difference financed?

Answer: Not applicable to GPA. Except for approximately $330,000 cost adjustment from the Government of Guam, GPA does not have any subsidy from the Government of Guam or the Federal Government.

Question: How does private versus public consumption compare?

Answer:

Projected
FY 1981

	Total KWH Usage (000-Omitted)	Number of Customers Tweleve-Months Ending	Average Usage Per Customer and Total Customer (000-Omitted)
Government	81,900	955	85.8
Commercial	195,271	2,687	72.7
Private	177,829	21,004	8.5
Total	455,000	24,646	18.5

Question: Are you familiar with the proposal for a 48 megawatt OTEC Facility and what are your reactions?

Answer: The Office of Territorial and International Affairs is familiar with the above proposal. We support the Government of Guam in its efforts to seek alternate energy sources. We will assist them when requested in their endeavors concerning the OTEC facility and feasibility study.

Health Facilities

Question: What is the condition of the health care facilities on Guam?

Answer: The New Guam hospital is in good condition. However, some minor modifications, and equipment are needed. The old Guam hospital facility is rapidly deteriorating to a point where extensive renovation is required to make the facility into a long term care unit, and for other than acute medical requirements.

Question: Do you have any plans for the remainder of the current authorization for health care?

Answer: The Government of Guam has developed a plan for the remainder of the current health care authorization. That plan, however, has never been formally submitted to the Department for review and consideration for this current budget cycle.

Land Claims

Question: What is the present situation on the Guam lands claims litigation?

Answer: Approximately 1200 claims have been filed as of this date. Trials are not anticipated to commence before October 1981.

Question: What is the potential exposure of the Federal Government?

Answer: If the U.S. Govenment is liable, estimated payment may be between $100 and $200 million including interest.

Port Expansion

Question: You have proposed to expand your port container yard at Apra Harbor for a total cost of some $4,100,000. Of this total, about $1,500,000 of the 50% loan matching requirement is assumed to be made available through an EDA grant. Has EDA made any commitment -- verbal or otherwise -- to you on this matter?

Answer: We have been informed verbally by EDA that due to budget cut backs, the possibility exists that funding for this project may not be available. Final budget amounts for EDA, and the consideration for approval of the project by EDA will not be known until the fall of 1981.

Question: Will you still fund this project if EDA doesn't come through?

Answer: Both the Government of Guam, and the Department feel that this project is a viable one in relation to Guam's potential for economic development. Should EDA funding not be available, we will look at possible funding alternatives.

Question: If so, where will the additional funds come from?

Answer: As mentioned above, we will look at funding alternatives which could include reprogramming of funds from other Guam construction projects.

Economic Development Loan Fund

Question: Last year, the delinquency rate for the Economic Development Loan Fund was about 30%. This year's justification indicates that it has gone below 30%, but gives no figure. What is the delinquency rate now?

Answer: Approximately 28%.

Question: Do you anticipate it to continue going down or will it level off?

Answer: We would hope that the Guam Economic Development Authority (GEDA) by instituting its new loan procedures will continue to reduce the delinquency rate to a point where it will level off to an average rate carried by most lending institutions. The new system called the "Tri-Part System" was developed by GEDA, in cooperation with SBA and local lending institutions.

Question: Is the current level acceptable?

Answer: It could be argued that due to the high level of risk involved in making loans from this fund, the current level of delinquency is acceptable. However, TIA and the Comptroller for Guam feel that if the fund is to survive, and to carry out the objectives provided for in the authorization of the fund, the current delinquency level is not acceptable.

Agat Junior-Senior High School

Question: You are requesting an additional $1.18 million to complete the Agat Junior-Senior High School, including the installation of collateral equipment and the construction of the physical education facilities. Specifically with regard to collateral equipment, you state the school cannot be opened without it. Am I correct that we are talking about desks, tables, chairs and other such items?

Answer: Yes, but also cafeteria and kitchen equipment, and laboratory equipment.

Question: Don't such items already exist that, for the meantime, can be used until new equipment can be purchased?

Answer: Certainly some desks, tables and chairs etc. might possibly be available, but the necessary cafeteria, kitchen, and laboratory equipment might not.

Question: If so, will they be used?

Answer: To the extent that these items are available the Government of Guam would use them until new equipment could be purchased.

AMERICAN SAMOA FINANCIAL CONDITION

Senator McClure. In American Samoa, what is the financial condition?

Mrs. Van Cleve. Initially it appeared that Samoa had a small surplus for fiscal 1980. However, further assessment suggests that because of debts to pension funds, unemployment compensation funds, and the like, it does not have a surplus. But it looks as though it's about even.

I should ask Mr. Novick to comment further on this, because this is his field.

Mr. Novick. Mr. Chairman, they are, in fact, in sound financial condition. They did end up the year with a reported surplus, but as Mrs. Van Cleve indicated, that is money that in fact is due other funds. So our best estimate right now is that they have no deficit, they have no surplus.

Senator McClure. What will the proposed reduction of $2,037,000 from the 1981 level mean in terms of services and construction?

Mrs. Van Cleve. For any kind of specific answer I think we would have to defer to the Governor.

Senator McClure. Would you provide your assessment for the record? We will get the Governor's as well.

Mrs. Van Cleve. We will do that.

Senator McClure. Those perspectives are not necessarily identical.

Mrs. Van Cleve. Quite right.

[The information follows:]

AMERICAN SAMOA FUNDING

The reduction of $2,555,000 in funding for American Samoa in fiscal year 1982 is comprised of a net increase in operations of $800,000, a net decrease in capital improvement grants of $1,225,000, and a net decrease in other programs of $100,000.

We do not believe that the increase of $0.8 million will have an adverse effect on the provision of local services. The budgeted amount represents a 4.5-percent increase from the amount appropriated in fiscal year 1981.

The capital improvement funds appropriated in fiscal year 1981 included $4,950,000 for a dock expansion project and four smaller items. The fiscal year 1982 proposal contains a smaller amount, but will fund several projects. American Samoa's construction requirements change from year to year. We believe that much can and will be accomplished with the request before you.

ENTERPRISE ACTIVITIES

Senator McCLURE. Why are the enterprise activities funded by the general fund?

Mrs. VAN CLEVE. Mr. Novick can speak to that.

Mr. NOVICK. Mr. Chairman, I don't know the reason why they are funded by the general fund. The enterprise funds are activities which are under the control of the American Samoa Government. They are supposed to be selfsustaining in the sense that they generate revenues——

Senator McCLURE. Are they profitmaking?

Mr. NOVICK. In some cases they are profitmaking, like the liquor store is profitmaking. The railway, in some years, has been profitmaking; in other years has not. But generally, they are supposed to be selfsustaining.

Senator McCLURE. What needs to be done? Can you make an evaluation or do you have an opinion about what needs to be done to make them profitmaking where they are not?

Mr. NOVICK. I would like to provide that for the record. The Comptroller and I have discussed some of these enterprises; not all.

Senator McCLURE. If you would do so, I would appreciate it.

[The information follows:]

ENTERPRISE FUNDS

The electric utility is the only major enterprise fund activity of the American Samoa Government that currently is not showing a profit.

In order to make the electric utility a profitable operation, the U.S. Government Comptroller for American Samoa recommends: the hiring of experts to operate and maintain the electric utility function; better technical training for employees currently working for the electric utility; improvement of the billing and collection systems and the effective enforcement of accounts receivable collections; improvement of the maintenance program with emphasis on preventive maintenance; and an intensive recruitment program to improve the quality of the management of the electric utility.

It should be noted that in May 1981 Governor Coleman abolished the electric utility division and established the American Samoa Power Authority by executive order.

GENERATORS—OVERHAUL OR REPLACEMENT

Senator McCLURE. I've asked some general questions earlier about power generation, but there is one additional question for American Samoa. What are your plans for overhaul of the generators or replacement?

Mrs. VAN CLEVE. This is Mr. Gallagher's department.

Mr. GALLAGHER. Currently, in the 1981 supplemental bill that is pending in the Congress, there is a $1.5 million item for the overhaul of the existing generators on American Samoa.

Senator MCCLURE. Is that adequate?

Mr. GALLAGHER. That will bring the units that are down back up on line. It is adequate for overhaul only.

Senator MCCLURE. Is there any plan to reprogram that money away from that into something else?

Mr. GALLAGHER. No, there was no plan to reprogram it. There was a possibility of a rescission or deferral on it, but that has gone by the boards.

Senator MCCLURE. As of now, that money is there? The administration has no plans except to spend it for that purpose?

Mr. GALLAGHER. As far as I know.

CANTON ISLAND

Senator MCCLURE. What is the status of Canton Island?

Mrs. VAN CLEVE. Canton Island is, at the moment, a territory of the United States, a possession of the United States. I can probably tell you much more than you want to know about Canton.

Senator MCCLURE. You were smiling when I asked the question. [Laughter.]

Mrs. VAN CLEVE. Canton has historically been claimed by both the United States and the United Kingdom. As a consequence of an exchange of notes in the late 1930's, the British and the Americans agreed to recognize one another's claims to the extent of both continuing to assert their claims in a civilized way. So the British and the Americans engaged in the joint administration of Canton and its neighbor, Enderbury Island, starting in 1939 and running up until very recently.

As part of the dissolution of the British Empire, the British were disposed to transfer their claim to Canton to the Gilberts, which are now the New Republic of Kirabati. The State Department, in connection with the creation of the Republic of Kirabati, has agreed to relinquish the U.S. claim and transfer it also to Kirabati, so that Kirabati will have total jurisdiction, responsibility, sovereignty, over Canton Island. The treaty so stating has been pending in the Senate for the last several years, and so far as I know, that's where it still is. But until that treaty is ratified, Canton remains a territory of the United States, subject by Executive order to the administrative responsibility of the Secretary of the Interior.

Senator MCCLURE. I think that treaty was only sent up last year. It may have been pending longer, but I think it's been pending here less than a year, or about a year.

Why is the Governor of the American Samoa the administrator?

Mrs. VAN CLEVE. Partly because he is its nearest neighbor. That is to say, American Samoa is closer to Canton than are most other parts of the Secretary of the Interior's responsibility, and the Secretary needed someone with oversight jurisdiction. Partly because the current Governor, Governor Coleman, was hopeful when the Gilberts took over Canton that it would be possible for Samoa and the Gilberts to work out some mutually profitable fishing arrangement, using facilities on Canton Island.

It appears, as best we understand it at the moment, that that is not likely to come to pass. But there were facilities, refrigerator facilities and the like, on Canton which were of potential value in a fishing undertaking.

Senator McCLURE. You say were. Are you telling me now they are not?

Mrs. VAN CLEVE. The facilities are still there, but I judge that Governor Coleman has concluded that the economic potential for an activity centered on Canton is not what he had hoped. So that was an initial reason for naming him as the overseer, which I think, does not continue to apply. There does continue to apply the first reason that I stated, which is that the Secretary needs an overseer, and Governor Coleman is the logical one, since he is relatively close.

Senator McCLURE. And general administration is still under Interior?

Mrs. VAN CLEVE. It is, by Executive order.

Senator McCLURE. You know of no plans to change that?

Mrs. VAN CLEVE. I know of no plans to change that. It would be automatically revoked when the treaty is ratified.

CYCLONE ESAU

Senator McCLURE. What was the effect of Cyclone Esau on Manua?

Mrs. VAN CLEVE. A total of something like 2.5 million dollars' worth of damage, much of which is being corrected as a consequence of work by FEMA and other Federal agencies. $2.4 million is the figure that excludes agricultural damage. Our latest information is that FEMA has approved the use of something in excess of $1,100,000 for a variety of cleanup projects, repair projects, and the like. The corps of engineers is funding a sea wall restoration project at a cost of $300,000 to $400,000. The Department of Education has agreed to reconstruct an elementary school that was knocked down by the storm. So all in all—we do not have a figure on the reconstruction of the elementary school, but it appears on the basis of the information that we have, that very close to that $2.4 million has been or is being met by Federal activity.

Senator McCLURE. Are additional funds needed?

Mrs. VAN CLEVE. We have not been asked by the Governor to seek them, and I think we really do not know, therefore, either way.

ADDITIONAL COMMITTEE QUESTIONS

Senator McCLURE. I have some additional questions with respect to educational financial assistance with respect to the replacement of the Samoan high school and the funding levels for that. I will submit those for the record.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Health Services

Question: What is the condition of hospital facilities?

Answer: Current physical condition of the hospital facilities in American Samoa is adequate. There is a need for an agressive operation and maintenance program to keep the facilities in good condition. A need to modernize and replace some of the current medical equipment is also present.

Question: How many referrals off-island were there last year?

Answer: 114

Question: What were the reasons and the costs?

Answer: Total cost was approximately $725,000. Reasons were varied; General Medical problems/diseases, General surgical problems, Cardiac, Neurology, Renal, Pulmonary, and Gastroenteritis problems.

Economic Development

Question: What plans are there for economic development?

Answer: In 1979 a broad-base, five-year economic development program for the Territory was developed and adopted by the American Samoa Government. The Economic Development Plan establishes specific policy objectives and outlines a work program to accomplish the economic development goals of the Territory. The plan also establishes a process to monitor and assure plan implementation and make plan revisions, as necessary on an annual basis. The following is a list of the major industrial sectors outlined in the plan:

Fisheries Development
Agriculture Development
Improvement and Development of Visitor Recreation Opportunities
Local Business Development
Industrial Development
Labor Force Development
Infrastructure Development
Economic Incentives

Question: Are there any statutory limits on Samoa incurring bonded indebtness?

Answer: To our knowledge there is no Federal statute concerning the limits on Samoa incurring bonded indebtness. The Constitution of American Samoa approved by the Secretary of the Interior, according to interpretation by the Attorney General of American Samoa, does not provide for bonded indebtness for the American Samoa Government. In order to provide for such, an amendment to the Constitution is required, thus requiring a constitutional referendum.

Water System

Question: What is the condition of the water distribution system?

Answer: The condition of the water distribution system currently is not adequate for present demands nor projected future use.

Question: Is the system delivering water at pressure all the time?

Answer: No, increased demand with current transmission lines being used at design capacity prevent adequate water pressure to all users.

Question: Are there plans to expand the system?

Answer: The FY 1982 March request provided for replacement and upgrading of segments of the present distribution system in addition to some expansion of the system. It is anticipated that further replacement/upgrading, and expansion of the system may be requested in future budget cycles.

Question: How will this be financed?

Answer: A large portion of the water development and distribution system in American Samoa was financed by Federal grant funds, mostly, through the Department of the Interior Appropriation Acts.

Future expansion and upgrading of the water distribution system can be either funded locally or through future budget requests to the Department.

Education

Question: Under the heading "Scholarship Fund" on page 85 of the justification, you indicate that mandatory service in the Territory in return for educational financial assistance is a policy decision now under consideration. Have you made any preliminary final decisions on this proposal?

Answer: No preliminary final decisions have been made as of this time. However, there appears to be strong support for the proposal.

Question: Do you have a timetable to make such a decision? If so, please share it with the Committee.

Answer: It is expected that final decision and recommendation by the Scholarship Board will be made to the Governor and the Legislature sometime in late July or early August, 1981 when the Legislature is in session.

Question: Last year, and again this year, funds are requested to rebuild the Samoana High School which was destroyed by fire in 1979. Last year's request, including the local share, was some $1.1 million, while this year's total cost was just $700,000. Why is there such a discrepancy?

Answer: Actually, there is no discrepancy. American Samoa at the FY 1981 Congressional hearings requested in addition to the Department's request for the $700,000 for the Samoana High School, and $400,000 for Vocational Education Buildings. The latter was a separate request and not part of the Samoana High School request. The total of these two projects for Education facilities was $1.1 million. It should be noted that the above $400,000 for the Vocational Education Building is also included in the Departments' FY 1982 request.

Question: Has any work yet been done on this project?

Answer: The A&E work and site prepration has been completed. This was funded by local revenue.

Question: If the Congress provides adequate funding, how long will construction take?

Answer: If funds for the project are available on October 1, 1981, construction could be completed some time in mid-summer 1982 with occupancy for the school year beginning in the fall of 1982.

Power

Question: What are the power generation needs of Samoa?

Answer: The current power need of American Samoa is between 21,400 KW and 25,800 KW.

Question: How is power presently supplied?

Answer:

Inventory of Existing Power Equipment & Current Status

Unit #	Make	Year Installed	KW Produced	Current KW Produced	Status
Satala Plant:					
1	Nordberg	1961	1,000	-0-	Under repair
2	Nordberg	1961	1,000	-0-	Under repair
3	Nordberg	1963	2,000	-0-	Under repair
4	Nordberg	1963	2,000	-0-	Under repair
5	Nordberg	1964	3,000	2,700	Operating at 90%
6	Nordberg	1964	3,000	2,700	Operating at 90%
7	General Motors	1978	2,500	2,100	Operating at 84%

Unit #	Make	Year Installed	KW Produced	Current KW Produced	Status
Tafuna Plant:					
1	Nordberg	1973	3,500	-0-	Under repair
2	Nordberg	1973	3,500	-0-	Under repair
3	General Motors	1978	2,500	1,700	Operating at 68%
10	TOTAL ASG EQUIPMENT		24,000	9,200	
ARMY UNITS:* (On loan to the American Samoa Government)					
B-1	EMD	1974	1,500	1,500	Operating at 100%
B-2	EMD	1974	1,500	1,500	Operating at 100%
B-3	EMD	1974	1,500	1,500	Operating at 100%
C-1	EMD	1974	1,500	-0-	Under repair
C-2	EMD	1974	1,500	1,400	Operating at 93%
C-3	EMD	1974	1,500	-0-	Scrapped
6	TOTAL U.S. ARMY UNITS		9,000	5,900	

*Army units B-1, B-2 and B-3 are located at the Satala Plant; C-1, C-2, and C-3 are located at the Tafuna Plant.

Question: What is the condition of the facilities including transmission?

Answer: Presently, only four of the ten Territory generators are operating and these have been derated approximately 20 percent, or 2,300 KW, due to mechanical problems. The current (April 1981) maximum operating capacity of the American Samoa Government equipment is 8,900 KW. The Army units are also operating at reduced capacity of 5,900 KW with only four units on-line. The total available maximum operating capacity is 15,100 KW. Any further appreciable loss of generating capacity will seriously affect the ability to meet demand.

Overall condition of the distribution system is relatively good. Some modernization, is required i.e. replacement of poles, transformers, insulators, and conductors. Additional transmission lines are required for expansion.

Question: What is the installed capacity?

Answer: Samoa units 24,000 KW. Army units 4,400 KW, total 28,400 KW.

Question: What are the average and peak loads?

Answer: Monthly average demand is 10,500 KW, monthly average peak demand is 12,900 KW.

Question: What is the cost of power generation, and what is the billing rate?

Answer: Cost of power generation is estimated at $0.18 per KWH. Estimated average billing all customers is $0.11 per KWH.

Question: How is the difference financed?

Answer: Basically, there is no subsidy, per se, intended for any user, as the basic rates were to be established to cover current operating costs other than fuel; and the fuel surcharge is adjusted for each change in the cost of fuel. However, the basic rates have been insufficient to recover about $14 million in contributed plant and equipment through annual depreciation and to pay for the more recent high costs of repair and rehabilitation of generating equipment. Consequently, the electric utility has a deficit of about $9 million as of April 30, 1981, financed largely by unappropriated advances from the General Fund of nearly $7 million. This $9 million deficit represents costs in excess of revenue billed, and is in essence a Government subsidy to all users on a pro-rata basis. Based on the total usage by the three segments of users for the past four years, the subsidy would pro-rate about 41 percent, Commercial; 30 percent Government; and 29 percent, Residential. The amounts shown below represent this pro-ration of the $9 million deficit.

Amount of Government Subsidy:

Government - $2.70 million to date
Commercial - $3.69 million to date
Residential - $2.61 million to date

Question: How does private versus public consumption compare?

Answer:

	Projected 1981		
	Total KW Usage	Number of Customers	Average Usage Per Customer KW
Government	19,600	284	1.6
Commercial	27,500	499	2.3
Residential	20,900	4,953	1.7
TOTAL	68,000	5,736	1.2

Question: What percent of the overall Samoa budget goes to fuel?

Answer: The estimated total fuel cost for the power generation in FY 1981 is approximately $5.6 million. Out of a total estimated operations budget of $47.8 million (local revenues and DOI grants) approximately 12% is attributable to fuel.

VIRGIN ISLANDS FINANCIAL CONDITION

Senator McClure. What is the present financial condition of the Virgin Islands?

Mrs. Van Cleve. I'm going to give you a short answer, and then ask Mr. Novick to comment further. The short answer is that there is a dispute. Our Comptroller believes that there is, as of the latest year that is auditable, fiscal 1979, an accumulated general fund deficit in the range of $12 million. For the same period, the Government of the Virgin Islands considers there's a slight surplus. The dispute probably rests upon the nature of the accounting system in the Virgin Islands now in use, and Mr. Novick knows a good bit about that subject.

Mr. Novick. Mr. Chairman, I'd be happy to discuss that. We do have with us the Acting Comptroller of the Virgin Islands, who I'll defer to if you like. He is the one who did the audits and can probably speak with much more detail to it than I can.

Senator McClure. I think he is scheduled this afternoon.

Mr. Novick. Fine, sir. Then I will address it to the extent that we are involved.

The $12.2 million is the deficit reported as of the end of fiscal year 1979. They were on and are still on a cash basis, and this is why there is a reported deficit. But that is not the reason why there's a disagreement between the Commissioner of Finance and the Comptroller. That deals with whether moneys are, in fact, owed to trust funds or not, and I think I would defer to them to discuss that difference.

MODIFIED ACCRUAL-TYPE ACCOUNTING SYSTEM

What I would like to point out is, they are now going to a modified accrual basis of accounting in which many of the accrued revenues—receivables—will be, in fact, on the books, and by doing so, much of the deficit will be eliminated because there are many more receivables due than there are payables owed.

We believe by the end of fiscal year 1980, notwithstanding the difference in interpretation of what should be properly accounted for and what should not be and what is owed and not owed, there will not be a deficit.

Senator McClure. Is that good accounting practice?

Mr. Novick. Yes, sir.

Senator McClure. Do you agree with that?

Mr. Novick. Modified accrual basis? Yes, sir.

Senator McClure. If that is—let me ask the question in a different way. Will you have reconciled the accounting systems by that change?

Mr. Novick. There will still be unreconcilable ledgers to journals; there will always be until we do a complete changeover and conversion. There will always be those questionable accounts, and that's where I would defer to the Comptroller because he's been involved with that intimately. But I do believe as of the end of fiscal year 1980, there will be virtually no deficit for the Virgin Islands.

Senator McClure. Why don't we have the Comptroller come up and describe that situation now?

Mr. Novick. Much of the elimination of the deficit has been because of increased collection efforts on the part of the government and reduced spending.

Senator McClure. Would you state your name for the record, please?

Mr. Caton. William Caton. The last fiscal year that was audited was fiscal year 1979. Our report disclosed or showed a deficit of $12.2 million, I believe. The Commissioner of Finance does not agree with our determination of the deficit. The Commissioner of Finance, I believe, shows in his report a fund balance or a surplus of approximately $100,000. There's a complete reconciliation of our differences included in the Comptroller's report.

The most significant difference between the Comptroller's deficit and the Commissioner of Finance's surplus has to do with a reserve for Federal income taxes payable, and our differences are what I would term as professional differences on how reserves should be established and maintained.

Senator McClure. Are you going to be able to reconcile the accounting systems?

Mr. Caton. Could you elaborate on that a little bit more?

Senator McClure. There are apparently some differences in the accounting systems that have existed in the past and will exist in the future. Are efforts underway to reconcile those accounting differences?

Mr. Caton. There are efforts to reconcile the various accounts. The efforts going on are through technical assistance. Technical assistance is not part of the Comptroller's office at this time, and I cannot expound to those reconciliations that will be made.

Senator McClure. Under the technical assistance side, then, I judge you can answer this; is that correct?

Mr. Novick. Mr. Chairman, we have done many reconciliations. Many of the accounts have been reconciled; there are many more to be reconciled. One of the major efforts was to, for example, reconcile the cash accounts to the bank statements. That has been completed in many instances. We are working on this; it will be done.

Senator McClure. It will be done?

Mr. Novick. Yes, sir.

Senator McClure. You know the longstanding difficulty we've had coming to grips with the differences of viewpoint with respect to the accounting. It's been a matter of great concern in Congress. So I hope it will be done. Can you tell us when it will be done?

Mr. Novick. I think we have made great progress to date. I think within the next year or two. I would look forward to a totally improved accounting system that's more responsive. I think with Mr. Christian's help—he was here in the audience; he is the Commissioner of Finance, and with the help of the Governor and the support of everyone, we will do it.

DEFICIT ELIMINATION

Senator McClure. Are you satisfied that the deficit elimination plan required under Public Law 96–597 has been developed and will be followed?

Mr. Caton. There is no deficit plan. My understanding is that Governor Luis will not request deficit financing, primarily because he is not satisfied yet that there is actually a deficit.

Senator McClure. And you think there is a deficit?

Mr. Caton. I think there is a deficit.

Senator McClure. That is not simply by bookkeeping?

Mr. Caton. Recognize that the accounting system for the Virgin Islands is a cash basis accounting system which does not always give you the proper answer. The acceptable accounting system for the municipality or territory would be a modified accrual basis. If the balance sheet were prepared on a modified accrual basis, it would show an entirely different figure. I believe there would be no deficit, or there would only be a small deficit if it were converted to a modified accrual basis.

But first, the accounting system itself must be converted to a modified accrual accounting system before you can develop such a balanced system.

Senator McClure. If I understand you correctly, you believe if that shift were made, there would be no deficit. It would be eliminated.

Mr. Caton. There would either be none or a small deficit. I believe it would be mostly eliminated. I can't say it will be entirely eliminated, because I think it wouldn't be—but I think it will be substantially eliminated.

Senator McClure. And you would be satisfied with that result?

Mr. Caton. Yes, I'd certainly be satisfied with that result.

Senator McClure. We still have—the Congress will still require assurance under the provisions of Public Law 96–597 that there is an elimination of the deficit. I think at some point a plan either has to be presented, or we would have to be convinced that, as a matter of fact, there is no need for it. If they are on a cash basis and have been on a cash basis and their cash basis indicates the presence of a deficit, then there must be something done to eliminate the deficit.

That, I think, is the clear requirement of Public Law 96–597.

Mrs. VAN CLEVE. We invited the Governor to submit a deficit elimination plan, just as we did Governor Calvo of Guam. We had no response. But I think probably what Mr. Caton has just reported—that is, the Governor's view that there is no deficit—is the answer to the question.

Senator MCCLURE. That doesn't really answer the question.

Mrs. VAN CLEVE. The Interior Department, I think, should send to the Congress a report along the lines of the discussion that you have just heard and direct it to that section of the statute. And we will undertake to do that.

CORRUPTION ARTICLES

Senator MCCLURE. Is the Department of the Interior familiar with recent articles on possible corruption in the Virgin Islands?

Mrs. VAN CLEVE. We are.

Senator MCCLURE. Can you offer a general comment?

Mrs. VAN CLEVE. That the Interior Department is, of course, concerned about the revelations of those articles. I would note that the articles are based in the first instance on the work of our Comptroller. It's Mr. Caton's office, and a six-volume audit on the Public Works Department of the Virgin Islands that we understand launched those articles, and those articles were based in very large measure upon material contained in the audit report. So while we are concerned on the one hand, we take some credit on the other for having produced this information.

As to the question of the next step, we are also concerned. The Under Secretary of the Interior called together within recent weeks, about 2 weeks ago, high level representatives from all of the concerned departments. There are many investigators now in the Virgin Islands from key Federal agencies, and the Interior Department is attempting to coordinate and remain informed with respect to those activities, so as to take additional steps, should they become necessary.

Senator MCCLURE. Has the matter been referred to the Inspector General?

Mrs. VAN CLEVE. Our Inspector General is part of the group that is studying the matter and is remaining on top of it.

Senator MCCLURE. What further efforts is the Comptroller undertaking?

Mr. CATON. All areas that the Comptroller felt needed investigation were turned over to the U.S. attorney and to the Attorney General for the territory. From that standpoint, it completed our audit. We have committed ourselves to support the U.S. attorney and to support the Attorney General in whatever accounting or auditing matters they need during their investigations.

Senator MCCLURE. Do you feel that the situation is progressing as it ought under the conditions?

Mr. CATON. I think it's progressing as rapidly as possible, taking into consideration the resources that are available.

Senator McClure. Do you have sufficient resources?

Mr. Caton. The resource limitation is in the U.S. attorney's office, which does not have enough investigators nor sufficient attorneys.

Senator McClure. Has he made any request for additional help?

INSPECTOR GENERAL RECOMMENDATIONS

Mr. Caton. Yes; and that will be—there will be recommendations coming from the Department of the Interior's Inspector General with regard to the type of resources that might be needed to pursue all of the investigations.

Senator McClure. Do we have any idea when that might be forthcoming?

Mr. Caton. That is awaiting a study that is being made by one of the U.S. attorneys in New Jersey. As soon as that study has been made and furnished to the Inspector General, shortly after that, I believe, the Inspector General would be able to make some recommendations.

Senator McClure. What timeframe are we looking at? A matter of weeks?

Mr. Caton. His study was due during the month of May. I would think it would be a matter of weeks. It probably will come forth sometime in June.

Senator McClure. Do you have sufficient authority to deal with the question?

Mr. Caton. I'm sorry, I didn't understand the question.

Senator McClure. Do you need any additional authority to be able to deal with the problems? Do you have sufficient authority under existing statute?

Mr. Caton. The authority would be with the U.S. attorney.

Senator McClure. But the Comptroller has sufficient authority to do whatever you have to do?

Mr. Caton. Yes.

ADDITIONAL COMMITTEE QUESTIONS

Senator McClure. I have some further questions with respect to the Virgin Islands, which I will submit for the record for a response in writing.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

ADDITIONAL COMMITTEE QUESTIONS

Power

Question: What are the power generation needs in the Virgin Islands?

Answer: Estimated, FY 1982 202,200 KW.

Question: How is power presently supplied?

Answer:

ST. THOMAS - ST. JOHN GENERATING UNITS

UNIT	YEAR INSTALLED	DESIGN CAPACITY	CURRENT CAPACITY
Unit No. 7 - Diesel*	1966	2.0 MW	1.7 MW
Unit No. 9 - Diesel	1960	3.0 MW	2.0 MW
Unit No. 10 - Steam	1966	7.5 MW	3.5 MW
Unit No. 11 - Steam	1968	18.0 MW	--- 1/
Unit No. 12 - Combustion	1970	15.0 MW	12.5 MW
Unit No. 13 - Steam	1974	35.0 MW	26.0 MW
Unit No. 14 - Combustion	1971	15.0 MW	12.5 MW
Unit No. 15 - Combustion	1981	20.0 MW	20.0 MW

ST. CROIX GENERATING UNITS

UNIT	YEAR INSTALLED	DESIGN CAPACITY	CURRENT CAPACITY
Unit No. 6 - Diesel	1969	4.5 MW	4.0 MW
Unit No. 7 - Diesel	1962	2.2 MW	--- 1/
Unit No. 10 - Steam	1967	7.5 MW	--- 1/
Unit No. 11 - Steam	1970	18.0 MW	18.0 MW
Unit No. 12 - Diesel	1968	4.5 MW	4.0 MW
Unit No. 13 - Combustion	1971	15.0 MW	--- 1/
Unit No. 14 - Combustion	1972	15.0 MW	7.5 MW
Unit No. 16 - Combustion	1981	20.0 MW	20.0 MW

1/ Units down and under repair.

* Used if underwater cable is not functioning or in case of emergency.

Question: What is the condition of the facilities including transmission?

Answer: Almost all of the units except for those recently purchased and installed need some kind of overhaul, repair, or replacement of parts. Overall condition of the system is less than adequate.

The transmission lines are in need of replacement throughout the system, and generally are not in good condition.

Question: What is the installed capacity?

Answer: 202,200 KW

Question: What are the average and peak loads?

Answer: Average 1982 estimated monthly production 37.9 million KWH; average peak monthly production 39.8 million KWH.

Question: What is the cost of power generation and what is the billing rate?

Answer: Current cost of power generation for 1981 is $0.14 per KWH. Current average billing rate for 1981 per type customer is $0.15 per KWH.

Question: How is the difference financed?

Answer: Not applicable. The Virgin Islands Water and Power Authority does not receive a subsidy from the Government of the Virgin Islands or the Federal Government.

Question: How does private versus public consumption compare?

Answer:

	Projected 1981 Total KWH usage (000 - Omitted)	Number of Customers	Average Usage Per Customer (000 - Omitted)
Government	52,413	1,492	35.1
Commercial	155,567	3,686	42.2
Private	140,053	32,596	4.3
TOTAL	348,033	37,774	10.6

Question: What percentage of the overall Virgin Islands budget goes to fuel?

Answer: The Power Authority is not subsidized, however, out of an estimated total expense of $0.15 per KWH approximately 71% of that amount is attributable to fuel costs, 12% for labor and 17% for operating expenses. Approximately $36.7 million is estimated to be spent on fuel oil in 1981.

Hospitals

Question: What progress has been made on Virgin Islands hospital construction program?

Answer: The Department of Health and Human Services (HHS) reviewed and approved the plans for the two new hospitals. HHS also has reviewed the preliminary drawings for the three community health centers. HHS has approved the final drawings for the St. John facility. It went out for bids, but bids came in too high. Bids went out second time.

The St. Thomas hospital is 35% complete and is on schedule.

The St. Croix hospital is 40% complete and is on schedule.

Question: Have you been close to total projected costs on the program or have there been cost overruns?

Answer: The project costs for the two hospitals are within the programmed and budgeted amounts with no costs overruns expected. The Virgin Islands Government now contends that projected costs for equipment, the St. John facility, and the three clinics will now exceed the previous programmed and budgeted costs.

Question: Why was the hospital exempted from the 75-25 funding formula?

Answer: TIA argued successfully in the budget process that the FY 1982 request for hospital construction was not a new project. It was the third and final increment of the hospital funding which began in FY 1980, and should not be subject to the 75-25 funding formula.

Question: What are the projected completion dates of all planned facilities?

Answer: St. Croix and St. Thomas hospitals - September 1982, St. John's facility and three clinics - October 1982.

Question: Can you provide for the Committee, please, a complete breakdown of total costs, including the local share and the share assumed by the Federal government.

Answer:

COST AND BUDGET

The total estimate for all projects as of April 1981 in Interior's 1982 budget was $63.2 million including the land valued at 1.2 million at the time of acquisition. The Virgin Islands now is estimating the total costs of the health facilities construction program at $68.5 million - a $5.3 million difference.

The details of the total cost estimates is as follows:

(Dollars in millions)

	President's Budget FY'82	Virgin Islands Revised FY'82 Budget Estimate	Differences in Total Costs
Construction			
St. Thomas, St. Croix hospitals	$48.7	$48.0	- .7
St. John Holding Facility	1.5	2.8	+1.3
Three Clinics	1.5	1.7	+ .2
Equipment (for all facilities)	5.6	7.8	+2.2
Land (in kind)	1.2	1.2	---
Off-site Utilities (storm drains water and sewer connection)	---	2.2	+2.2
Other Construction Costs (A&E, fees, taxes, contingencies administration costs, equipment installation, etc.)	4.7	4.8	+ .1
TOTAL	63.2	68.5	+5.3

The FY 1982 budget request was computed as follows:

Total construction & equipment cost	$62.0
Value of land at time of V.I. acquisition	1.2
Total Project Costs	$63.2
Less 1980 Appropriation (not subject to 90/10)	-21.0
Balance subject to 90/10	$42.2
Less 10% Virgin Islands' share (land, $1.2 M, cash, $3.0 M)	4.2
90% Federal share	$38.0
Less 1981 Appropriation/Transfer	19.8
Computed 1982 Request	$18.2

Summary

DOI Funds	$59.0
VI Local Match	4.2
TOTAL	$63.2

Indebtedness

Question: What is the bonded indebtedness of the Virgin Islands?

Answer: $73,863,000 as of September 30, 1980. This does not include the indebtedness of the independent instrumentalities.

Question: How much of this has a Federal guarantee?

Answer: $30,236,000 as of September 30, 1980.

Question: How much money is still available for guarantee?

Answer: $30.0 million

Question: Of the funds presently guaranteed, how much has been drawn down and how much obligated?

Answer: $31.0 million drawn down as of September 30, 1980, and $11.9 million obligated as of September 30, 1980.

Hess Agreement

Question: Have you reviewed the agreement between the Virgin Islands and Hess Oil Company? How do the revenue compare with the previous agreement?

Answer:
Major revenue advantages of the new agreement include:

(1) Payment of full income tax (previously only 25 percent paid);

(2) Payment of $10 million minimum in property tax (previously no property taxes were paid); and

(3) Reduced fuel cost to the local water and power utility.

On the other hand, the Territorial Government will lose an estimated $3 to $5 million in interest earned each year. The Territorial Government delayed making refunds to the Hess Oil Company, temporarily investing the funds until the refund was made.

Question: What will be the effect on the Virgin Islands financial condition?

Answer: The financial condition will be improved under the new agreement. However, other factors not related to the agreement may result in an overall decline of the financial condition. Furthermore, during some years Hess may not pay any income taxes because of economic factors beyond the control of the Virgin Islands. Recent newspaper articles indicated Hess will not be paying any income tax during the current year (1981).

Alien Situation

Question: What is the situation with respect to aliens?

Answer: This is rather a broad question. The Virgin Islands administration has devoted tremendous time and effort towards seeking solutions to the Territory's immigration problems. A bill drafted by the Virgin Islands administration and introduced by the Virgin Islands delegate is currently before the Congress to permit long-time bonded aliens to obtain permanent resident status. The number of illegal aliens in the Virgin Islands is thought to be several thousands, with no genuine prospects for reducing that number or effectively preventing further undocumented entries into the Territory.

Question: What percentage of the V. I. population is alien?

Answer: Figures developed by the Virgin Islands, with the assistance of the Immigration and Naturalization Service, indicate that documented non-citizens comprise approximately 8% of the population of the U.S. Virgin Islands. The total number of non-citizens, including those who have entered without inspection, is probably a considerably higher percentage.

Question: What concern is there over immigration?

Answer: The primary concern of the people of this Territory, as seen by the Virgin Islands Government, is that future Virgin Islands immigration policy avoid the terrible mistakes of the past. The temporary worker program, designed for application in the continental United States, was applied locally to create an immigration nightmare which began in the 1960's and is still with us today. The legislation now before the Congress contains a provision for termination of the temporary worker program as it applies in the Virgin Islands. The complex problem of how to deal with the non-citizen who has entered without inspection should be addressed.

Population

Question: How does the present population compare to that of 1970? 1960?

Answer: The 1960 decennial population figure was 32,099 as compared with a 1970 decennial census figure of 75,151, for a total increase of 43,052 persons. Comment by the U.S. Government Comptroller: The Bureau of the Census reported a population of 95,591 for 1980.

Question: How much of that increase is immigration?

Answer: Although no figures are available regarding the number of immigrants to the Virgin Islands from Puerto Rico or the mainland, it is well known that thousands of United States citizens came to the Virgin Islands during this "boom" period. The number of non-citizens who immigrated to the Virgin Islands between 1960 and 1970 is also difficult to pinpoint due to arrival and departure fluctuation; however, the population is believed to have increased by between 12 and 15 thousand persons due to non-citizen immigration between 1960 and 1970. The population increase attributable to immigration of citizens and non-citizens to the Virgin Islands is likely well over 50%.

Question: How much of the increase is from the mainland or Puerto Rico and how much from outside United States?

Answer: The answers previously given are as responsive as we are presently able to be to this question. If more detailed information is necessary, a rather detailed study of census information would have to be undertaken by the Department of Commerce.

Water Situation

Question: What is the condition of the water supply in the Virgin Islands?

Answer: The general condition of the Virgin Islands water systems is inadequate, but improving.

Question: Is there adequate supply?

Answer: The water supply has been substantially improved by the recent purchase of the three 1.25 mgpd water desalination units from the firm of Israel Desalination Engineering (IDE), but the acquisition of additional desalination units has been undertaken and must be accomplished before projected water needs for the next five years will be met.

Question: Is the distribution system adequate?

Answer: The distribution system is, at present, the greatest single drawback in the Virgin Islands water system. Broken pipes are common due to the age of the system, and many areas of the Virgin Islands are not served with distribution pipes and must rely upon expensive trucking of water. A comprehensive study of the water distribution system has been undertaken and should lead in the near future to positive action in alleviating distribution problems.

Question: What is the financial condition of WAPA?

Answer: WAPA remains in a serious financial state, with its water system heavily indebted to its electrical generation system. Recovery of the WAPA water system is completely contingent upon sale to the government of water produced by the three large IDE plants already acquired and by three 550 thousand gpd plants which are proposed for acquisition.

SUBCOMMITTEE RECESS

Senator McClure. Thank you very much for your patience in response to the questions.

Mrs. Van Cleve, I know from our past conversations which have been many over a number of years, that you share some of the frustrations that I have expressed this morning. I don't indicate anything other than that with respect to your personal conviction or your personal dedication to solving some of these problems. So my comment is not aimed at you.

But some of the conditions in the trust territory simply cannot be defended, neither by the administration nor by the Congress. We simply have to find ways of doing things better than we have done them in the past, or we will all be justly accused by others. I hope we will be able to find that answer.

Thank you very much. The subcommittee will stand in recess until the hour of 1 o'clock.

[Whereupon, at 12:25 p.m., Thursday, June 4, the subcommittee was recessed to reconvene at 1 p.m. this same day.]

(AFTERNOON SESSION, 1:05 P.M., THURSDAY, JUNE 4, 1981)

AMERICAN SAMOA

STATEMENT OF HON. PETER T. COLEMAN, GOVERNOR OF AMERICAN SAMOA

ACCOMPANIED BY:

TUANA'ITAU F. TUIA, SPEAKER, HOUSE OF REPRESENTATIVES, AMERICAN SAMOA

GALEA'I P. POUMELE, PRESIDENT OF THE SENATE, AMERICAN SAMOA

PREPARED STATEMENTS

Senator JOHNSTON. [presiding.] Good afternoon. This is the second session of the subcommittee's hearings on the 1982 budget request for the Office of Territorial and International Affairs. This afternoon we will be receiving testimony from the representatives of the Governments of American Samoa, Guam, the Northern Marianas, the Commonwealth of the Virgin Islands, the Federated States of Micronesia, Palau, and the Marshall Islands.

We will begin with Governor Coleman of American Samoa. We are delighted to have you back before the committee. If you will introduce any associates you have brought with you. We will, of course, put the entire written statement in the record, and you might proceed to highlight some of the principal items from your statement. Then we'll have a few questions for you.

[The statements follow:]

STATEMENT OF FOFO I. F. SUNIA

THANK YOU FOR GIVING ME THIS OPPORTUNITY TO SPEAK ON THE 1982 BUDGET FOR THE TERRITORY OF AMERICAN SAMOA.

EVERY YEAR, THE GOVERNOR AND LEGISLATIVE LEADERS OF AMERICAN SAMOA APPEAR BEFORE THIS COMMITTEE TO DISCUSS THE TERRITORY'S BUDGET. THIS YEAR, I, AS THE TERRITORY'S FIRST MEMBER IN THE HOUSE OF REPRESENTATIVES, HAVE THE HONOR TO JOIN IN SEEKING YOUR FAVORABLE CONSIDERATION.

AMERICAN SAMOA'S ULTIMATE GOAL IS TO BECOME FINANCIALLY SELF-SUFFICIENT AS EARLY AS POSSIBLE. IT IS AN AMBITIOUS GOAL- ONE WHICH CAN BE ACHIEVED ONLY WITH DETERMINATION, HARD WORK AND FINANCIAL ASSISTANCE FROM THE FEDERAL GOVERNMENT.

WE ARE DETERMINED AND PREPARED TO WORK HARD. BUT WE HAVE TO CONTINUE TO SEEK THE NECESSARY FINANCIAL ASSISTANCE FROM THE FEDERAL GOVERNMENT UNTIL OUR DEVELOPMENT EFFORTS BEGIN TO BEAR POSITIVE RESULTS. WE HOPE IT WOULD NOT BE TOO LONG BEFORE SUCH RESULTS BECOME EVIDENT.

A COMPREHENSIVE DEVELOPMENT PLAN HAS BEEN ADOPTED FOR THIS PURPOSE. IT HAS BEEN DESIGNED TO LAY DOWN THE FOUNDATION FOR A SOUND ECONOMY. CERTAIN DEVELOPMENT PROJECTS UNDER THIS PLAN HAVE ALREADY BEGUN; OTHERS ARE STILL ON THE DRAWING BOARD; AND STILL OTHERS ARE AWAITING THEIR TURN WHICH WILL COME WHEN OTHERS ARE EITHER WELL ON THEIR WAY OR COMPLETED. THE LACK OF LOCAL RESOURCES MAKES IT ABSOLUTELY NECESSARY FOR US TO SEEK ASSISTANCE FROM THE FEDERAL GOVERNMENT IN MEETING THE COSTS OF MOST OF THESE PROJECTS.

WE ARE AWARE OF THE FACT THAT THE FEDERAL GOVERNMENT IS INCLINED TO ADOPT BASIC CHANGES IN ITS ECONOMIC PHILOSOPHY - AND WE ARE PREPARED TO SUPPORT WHATEVER CHANGES WHICH MAY TAKE PLACE AS A RESULT. WE DO HOPE, HOWEVER, THAT SUCH CHANGES WOULD NOT UNNECESSARILY HINDER OR DELAY OUR EFFORTS TO BECOME FINANCIALLY SELF SUFFICIENT.

THE BUDGET AS PROPOSED REFLECTS AN ALL OUT EFFORT ON THE PART OF THE TERRITORY TO CONTINUE WITH ITS DEVELOPMENT PROGRAM. IT IS ENVISIONED THAT THE SUCCESS OF THE PROGRAM WOULD SUBSTANTIALLY REDUCE OUR DEPENDENCE ON FINANCIAL ASSISTANCE FROM THE FEDERAL GOVERNMENT. THE SOONER WE ARRIVE AT THAT STAGE, THE BETTER IT WILL BE FOR THE FEDERAL GOVERNMENT AND FOR US. ULTIMATELY, IT WOULD, QUOTE, GET US OFF THE FEDERAL GOVERNMENT'S BACK, UNQUOTE.

THE FUNDS REQUESTED WILL PROVIDE FOR THE COSTS OF GOVERNMENTAL OPERATIONS AND CERTAIN INFRASTRUCTURAL DEVELOPMENT ACTIVITIES WHICH THE TERRITORIAL GOVERNMENT HAS NO AVAILABLE RESOURCES TO MEET. THE GOVERNOR

AND THE TERRITORIAL LEGISLATIVE LEADERS ARE HERE TODAY TO DISCUSS THESE IN DETAIL WITH YOU.

MY PRESENCE HERE TODAY IS TO GIVE THE BUDGET UNDER REVIEW MY FULLEST SUPPORT. TO THAT END, I ASK YOU, MR. CHAIRMAN AND MEMBERS OF THE COMMITTEE, TO GIVE RECOGNITION TO THE PROFESSED GOAL OF AMERICAN SAMOA'S DEVELOPMENT EFFORTS AND TO CONSIDER WITH FAVOR THE TERRITORY'S BUDGET AS PRESENTED.

I AM VERY PLEASED TO HAVE HERE TODAY THE DELEGATION FROM AMERICAN SAMOA. WITH YOUR PERMISSION, MR. CHAIRMAN, I WOULD LIKE TO FORMALLY INTRODUCE THEM TO YOU...................

IN CLOSING, I WISH TO ACKNOWLEDGE WITH THANKS THE IMPORTANT ROLE CONGRESS HAS PLAYED IN SUPPORT OF AMERICAN SAMOA'S DEVELOPMENT AND IN THE PASSAGE OF LEGISLATION PROVIDING THE TERRITORY WITH A CONGRESSIONAL SEAT WHICH I HAVE THE HONOR OF BEING THE FIRST TO HOLD. WITHOUT THE SUPPORT OF UNITED STATES LEGISLATIVE LEADERS SUCH AS YOU, AMERICAN SAMOA WOULD NOT HAVE BECOME A SHINING EXAMPLE OF THE SUCCESS OF AMERICAN DEMOCRACY IN OUR REMOTE PART OF THE WORLD.

THANK YOU.

Statement of Peter T. Coleman

Mr. Chairman and distinguished members of the Committee, it is my pleasure, on behalf of the people of American Samoa, to appear before you in support of our budget request for Fiscal Year 1982. Because of your support, excellent progress has been made towards the development of our economic and social processes as well as our capacity to administer approved programs. Given the transition to increased self-government and the inherited problems of the past, progress has been relatively smooth. Not only has your support in the past been essential, but I solicit your continued help as we transit this crucial period.

American Samoa's request for fiscal year 1982 is $23,713,000 which includes $18,400,000 for basic operations support; $4,913,000 for Capital Improvement Programs, $250,000 for the Economic Development Loan Fund, and $150,000 for Canton Island Administration. In total, this is a reduction of $3,537,000 from current levels or a reduction of 13%. The decrease is primarily attributable to a reduction in funding for Capital Programs of $4,237,000 or 46%. Support for operations has a modest 4% increase of $800,000. As part of the total for operations, the budget includes $750,000 for the High Court, a 10% increase. The Economic Development Loan Fund has been reduced to $250,000. The $150,000 for Canton Island is a requested reimbursement for costs incurred by American Samoa in fiscal years 1980 and 1981 due to oversight responsibilities for the friendship treaty delegated by the Secretary of Interior to the American Samoa Government. Approval of the treaty by the U.S. Senate is pending.

The following data comparing local revenues with federal support for our budget over the last four years indicates, I believe, not only our dependence on federal support, but also significant progress made by American Samoa in assuming an increasing proportion of operating costs with local funds.

	1978	1979	1980	1981	1982
Local Revenues	33.2%	40.4%	44.7%	42.7%	46.0%
Federal Funds	66.8%	59.6%	55.3%	57.3%	54.0%
			$ MILLION		
Appropriated Local Funds	10.6	16.4	16.3	17.1	17.4
Local Enterprise Funds	6.6	8.1	11.0	14.1	16.6
Total Local:	17.2	24.5	27.3	31.2	34.0
DOI Grant-in-aid	20.9	21.5	17.3	27.3	24.7
Federal Categorical Grants	13.6	14.6	16.4	14.4	15.2
Total Federal:	34.5	36.1	33.7	41.7	39.9

For fiscal years 1979 and 1980, our revenue attainment, although to some extent, due to non-recurring items, have been in excess of our estimates, which has allowed us to eliminate the prior years' deficit and address unpredictable problems that have occurred within our own resources, thus, obviating requests for Federal help when these needs arise. It has allowed us to address such problems as the African Snail invasion, the deteriorating condition of schools and the need to meet unanticipated additional federal matching requirements and natural disasters such as the LCU that sank in Manu'a and damages caused by the storm "Esau".

The revenue picture, unfortuantely, has not been as good so far this year. Through the first six months, revenue, at best, is running about the same as last year, pending any changes in the second half. No doubt part of this has been due to business disruption from the electric situation combined with a sluggish economy in general.

With regard to the Electric Utility situation, I believe that we have taken the steps to address these problems. Work has been completed on a new financial management system and that is in place. The development of a Power Authority is well under way and we have addressed the additional resource management requirements necessary for an effective and efficient operation. I'm sure you know, however, that important long range improvements will take time. In the mean time, although we have done our best to address resource requirements internally, there are immediate needs for replacement of equipment that are beyond our ability to support. You will recall that I discussed this with you last year. These needs still exist and we need your help.

Since the FY 1982 budget before you, as approved by the Legislature, is the result of a planning process which took place many months ago, expected categorical grants shown are out of date in that they do not reflect the proposed reductions which as you know, are not yet fully resolved. The result will surely be increased demand on our local revenues.

Planned cuts in federal income taxes could have a very significant effect on our local revenues since this tax, applied locally, represents 63% of local revenues. At this time, it appears that we may have to either seek an exemption for American Samoa through the local legislature or provide for it through other alternatives.

I also want to highlight the importance of our Capital Improvement Programs. Some of these projects address very important problem areas, such as the fire at Samoana High School, overcrowded classrooms and school buses. Beyond this, however, many of the 1982 programs represent projects that have the best potential for permanent long-range expansion of our economic capability. These include not only further improvements in basic utilities and roads, but such outstanding projects as badly needed fisheries facilities. Your support of these crucial projects is very important to our vitality.

You will recall last year that a 10% matching was required for all CIP projects in the territories. The matching requirement for FY 1982 has been raised to 25%. Because this policy change occurred after our budget was prepared, the 25% match is not reflected in the document before you. We have not planned for it and because local revenues of that magnitude cannot be available at a moment's notice, our only choices are (1) to ask for a waiver of the matching requirements and (2) is to reluctantly offer to reduce our water projects by $982,000 to match the reduction in federal funds. This work, as a matter or priority will have to be deferred into the future.

The small amount requested for the Economic Development Loan Fund is likely to support one or two projects. As you know from our discussions in the past, the lack of venture capital, either in the form of loans or loan quarantees, and not only for business but for housing programs, is still a major problem in American

Samoa. Not only is your approval of this item solicited, but your advise and help on how we can "break this log jam" would be appreciated.

Also, the imposition of National Labor Relations Board requirements with respect to increases in our minimum wage, as I mentioned last year, continues to be costly.

Beyond the budget issues for fiscal year 1982, I would like to take a few minutes to highlight the progress we had made in the past year:

(1) Other efforts in the economic development area are making progress. Despite the awful problem with the african snail, our agricultural programs, in general, are better than last year. The fisheries program is expanding, and, as you know, both canneries have expanded significantly. The industrial park is expanding slowly but surely. Two new businesses of good size have opened in the last couple of months.

(2) Efforts to continue the development of the reliable supply of safe drinking water are progressing well and the FY 1982 request is needed to continue this vital program.

(3) Regular international air service continues to be a problem. Our only international carrier reduced flights to three times a week including a strike for two months that further hampered air traffic. Only recently, however, a local airline has begun service to Tahiti and Honolulu. We believe it is a significant step and we are encouraging it. Regional airlines are expanding their activities also.

(4) Our capability for self-sufficiency in health care has improved over the past year. Several surgical operations, which previously required referral off-island, have been performed locally for the first time. Efforts to contain costs for off-island care have progressed well until the airline strike forced some special flights to evacuate critical patients. This is a good example of the interdependency between our economic program and other basic government services.

(5) Our solid waste and waste water programs have improved. We have met standards in waste water treatment, and the recently approved ocean dumping of cannery waste is progressing satisfactorily.

(6) Satellite communication has been installed and the existing system is being modernized and expanded with local resources.

(7) Our road system has been improved and expanded. Numerous safety improvements have been made to meet federal standards but more importantly, new roads have made many of our villages more accessible to essential services. The road program proposed for FY 1982 will inter-connect three villages at the western tip of the island and open up agricultural land for futher development.

(8) We have recently added significantly to the resources available for both our audit effort and for manpower training.

Lastly, I would like to report that I am very encouraged with the efforts made in the area of regional development. I can see our joint efforts, especially through the Pacific Basin Development Council, to have a major impact on American Samoa's future, and I urge your continuing support.

Despite our problems, I believe we have laid the foundation that will truly support the building of American Samoa in the directions that both the Territory and you, our sponsors, want. Thank you, Mr. Chairman and Members of the Committee, for your time, your continuing interest and your support for American Samoa.

AMERICAN SAMOA GOVERNMENT
CAPABILITY STATEMENT

Agency/Bureau: Office of Territorial Affairs
Appropriation: Administration of Territories
Activity: American Samoa, Construction
Proposed Amount: + $8,000,000 - Power Generation Equipment

Current Program:

During the fiscal year 1980 budget hearings, the Governor of American Samoa declared in his proposed program that he would be undertaking a thorough review and evaluation of the power situation in the territory. Subsequent to that declaration, an engineering firm was constracted to evaluate the existing equipment as well as future requirements for power generation equipment. The study was completed in late 1979. The review recommendations were based on the premise that the existing power production and service reliability were sufficient to meet the territory's needs through the end of FY 1982. The Report's overall recommendations were thus: (1) short term - to replace the base load equipment purchased in the 1960's through aquisition of 6 megawatts gas turbine units; and (2) long-term - earmarked for the latter part of the 1980's was a twofold objective: (a) to provide additional power for increased demand and (b) to design power plants around technologies that would decrease dependency on fossil fuel.

The Office of Territorial and International Affairs (TIA) initial request to the Department for FY 1982 included American Samoa's request for funding the short term recommendation. The request was denied on the grounds that American Samoa should seek funding through loan guarantees.

In the meantime, during the first week of August 1980 the power situation in American Samoa totally disintegrated into a crisis situation.

During the summer several of the generating units in the plants had to be shut down. These unscheduled shut downs and major repairs required to bring them back on line caused an over-extension of operational units beyond normal off-time maintenance requirements, thus creating additional outages for maintenance. Six of the ten power generators were purchased prior to 1965. Age combined with the debilitating factors of a tropical environment, such as high humidity and temperatures, excessive rainfall and salt air, and uncontrollable factors as unavailability of or delays in receiving repair parts, proved to be catastrophic. During critical periods, power outages averaged three hours per day althernating throughout the island.

At this point in time, the possibility of the Secretary of the Interior extending loan guarantees to the American Samoa Government to finance the power generating facilities is not a viable alternative. The Constitution of American Samoa prohibits the use of money that the government does not have. This provision has been interpeted to prohibit borrowing. In order to borrow, therefore, the Constitution would have to undergo a lengthy amendment process, estimated at over two years. Results of this effort cannot be predicted.

If borrowing authority was made available, a credit rating will have to be established based on reliable financial data before the entity is eligible to issue bonds. A new power authority would need between three and five years of reliable production data before indebtedness is considered a reasonable option.

While the concept of loan guarantees might be a viable alternative in the long term, it is not, and cannot solve the immediate short term need for an adequate supply of power in American Samoa.

Amount Budgeted in FY 1981: None

Feasibility:

Immediate action will require an increase in generation capacity at the EUD of 6 megawatts prior to the end of calendar year 1982. Because of the short time available, it is essential that the initial expansion be a conventional type of plant consisting of units presently available and capable of being procured and installed within the remaining time following appropriations approval. Longer range increases in generating capacity are directed toward a lessened dependence on petroleum fuels. These plants are longer range in that, even though conventional design, the components have a longer delivery time than can be tolerated for short term implementation, or various long term studies are necessary to prove their feasibility and applicability to the Samoan environment.

Capability:

All cost data in the survey were presented as 1979 dollars. Adjustment to 1982 dollars result in an approximate installed cost of $8,000,000.

Outlay Effect:

1981 - None
1982 - $6,000,000
1983 - $2,000,000

Agency/Bureau: Office of Territorial Affairs
Appropriation: Administration of Territories
Activity: American Samoa
Proposed Amount: + $1,000,000 - Housing Loan Fund

Current Program:

The FY 1979 $1,000,000 housing loan fund has been totally committed. There are currently over 1500 loan applications pending for housing loans. Fifty percent of these are for new homes while the other fifty percent are for home improvements. The unfunded loan applications totaled $10,000,000. The two private banks in the territory are commercially oriented and are not a significant factor in the home loan market. Contacts with the World Bank to borrow money for this purpose have been unsuccessful thus far due to required guarantee by the U.S. Government before American Samoa can participate in the Bank's loan program.

Amount Budgeted FY 1981: None

Feasibility:

With the above constraints, the need for more housing loan funds is more profound than ever before. Based on past experience and given the present capability available in the Development Bank of American Samoa, we believe a $10,000,000 housing loan program is manageable and the growth potential for the fund is achievable. Loan guarantees by the U.S. Government would open doors at various financial institutions or direct loans by the Economic Development Administration would be of great assistance to our home loan program.

Capability:

The $1,000,000 loan request would satisfy approximately one hundred (100) loan applications selected on a first-come-first served basis.

Outlay Effect:

1982 - $1,000,000

Agency/Bureau: Office of Territorial Affairs
Appropriation: Administration of Territories
Activity: American Samoa - Capital Improvement
Proposed Amount: + $900,000 - New Tugboat

Current Program:

One of the deep draft tugboats owned by ASG was the cargo lifeline to the Manu'a islands and north shore village projects. It shipped fuel for electric utility, food, medical and other supplies to Manu'a and north shore villages as well as bringing back food and handicrafts to be sold on the main island. The only other transportation is via small aircraft or by a used landing craft utility whose useful life is limited. The tugboat also assists in the berthing of cargo vessels as well as fighting fires on vessels and harbor facilities adjacent to the Pago Pago Harbor. This vessel sank recently near the Manu'a islands due to sudden squalls and the resulting high swells which caused the boat to overturn.

Amount Budgeted in FY 1981: None

Feasibility:

The proposal is to purchase a new deep draft tugboat to maintain the present link between Manu'a and the north shore villages. The new vessel is also needed to maintain the present efficiency of water transportation services in the harbor area.

Capability:

The $900,000 request will allow the aquisition and delivery of an appropriate vessel.

Outlay Effect:

1982 - $900,000

Agency/Bureau: Office of Territorial Affairs
Appropriation: Administration of Territories
Activity: American Samoa-Disaster Clean Up
Proposed Amount: +$300,000-Western District Disaster Relief

Current Program:

In the aftermath of the Western District land and mud slides, the following situations became highlighted. The Poloa-Fagamalo pioneer road was severely damaged. There are funds to restore it to its original condition but the road could still be tenuous in future occasions of heavy rain. Several village catchment and stream type water systems were damaged or destroyed. Funds are available to restore those systems but they, like the roads, could be subject to damage in the future also. In addition, more than thirty (30) homes have either been totally or partially damaged. Although local funds have been made available, they have been inadequate due to escalated construction costs.

Amount Budgeted:

FY 1980-$100,000
FY 1981

Feasibility:

The funds requested will assist the homeowners in restoring their homes to their original condition. It will also assist in the upgrading of village water catchment systems thus assuring safe drinking water for the residents of the village affected.

Capability:

The estimated costs of this proposal are broken out as follows:

Housing Assistance	$250,000
Water Catchment Systems	50,000
	$300,000

Outlay Effect:

1982 - $300,000

Statement of Tuana'itau F. Tuia and Galea'i P. Poumele

Thank you for this opportunity to comment upon the FY 1982 Territorial budget request, as outlined in the opening statement of Governor Coleman.

We are very proud of the fact that in 5 short years the Territory of American Samoa has dramatically decreased its financial dependency upon federal funds. In FY 1978, over 2/3ds of our total government services were financed directly or indirectly from federal revenues. In FY 1982, we expect to be nearly equal partners in the financing of the Territorial government.

As the FY 1982 request reveals, not only has the federal share of the Territory's projected budget decreased proportionately, but also in total dollars. We are well aware of the difficult choices facing Congress during these times of decreasing federal expenditures. We accept the public demands for economizing at all levels of government. The FY 1982 budget request reflects our commitment to provide basic governmental services at a reduced level of federal funding.

CAPITAL IMPROVEMENT PROGRAMS FY 1981

As the Governor has stated, the Electric Utility and the Water system are critical to the future of American Samoa. We too, share the Governor's reluctance to reduce the overall C.I.P. for Water Improvements by nearly $1 million.

The other C.I.P.'s will assist our long term efforts to provide the Territory with a well trained labor force, adequate surface transportation routes and expanded dockage facilities. These improvements coupled with improved water and electric services, represent the spring boards of American Samoa's future economic development. The revised request for $4,913,000 in C.I.P.'s represents a $4,237,000 decrease in the FY 1981 Territorial budget.

BASIC OPERATIONS SUPPORT

The $18,400,000 request for Basic Operations Support does represent a slight increase ($800,000 or 4%) from the FY 1981 Territorial budget. We want to emphasize that this increase, as revealed in budget request, is more than offset by the decreases in other budget areas. We are confident that barring any unforseeable natural disaster, we can fund the basic government services of the Territory in FY 1982 with the amounts requested.

OTHER

The remaining two requests are for the Economic Development Loan Fund ($250,000) and the Canton Island Administration cost reimbursement, ($150,000). These items and supporting data have been adequately detailed in the budget request documents before you.

CONCLUSIONS

Every budget contains compromises as well as excludes some worthwhile and necessary projects. The Territory's FY 1982 budget request follows this pattern. It is an austere budget, predicated upon the Territory's dual desires to contain the costs of government and to reduce reliance upon federal funding. We sincerely hope our efforts receive your approval.

Thank you Mr. Chairman and Members of the Committee for your consideration. If there are any questions, we would be pleased to address them at your convenience.

BUDGET REQUEST

Governor COLEMAN. Thank you, Mr. Chairman. I'm pleased to present the President of the Senate of our Legislature for American Samoa and the Speaker of the House of our Legislature.

Senator JOHNSTON. Mr. Speaker, we're glad to have you here with us today.

Governor COLEMAN. Mr. Chairman, one is always comfortable coming on this trip for the special privilege of appearing before this honorable committee. I wish to extend to you, Mr. Chairman, and the members of the committee, the gratitude of the Samoan people and their warmest wishes.

My statement, as you indicated, will be made a part of the record and the highlight of this presentation is that we are asking for the basic operations support and improvements and funds for our economic well being.

$18.4 million for the basic operational support remains the same as last year. The $4.9 million capital improvement support is 46 percent below previous requests. So that overall, there has been a total reduction of 13 percent in our request for funds.

Our request also includes $750,000 for the high court's operation. As you may recall, the high court is now part of our budget submission. Before it was a special grant from the Interior Department.

The capital improvement programs or projects include classrooms for one of our high schools, a vocational education building, schoolbuses, improvements to one of our docks, one of our roads that was severely damaged by one of the storms that hit American Samoa, and some water improvements on the island.

POWER PROBLEMS

In all these requests, though, I must report to the honorable committee, that overall the administration of American Samoa has stayed within the disciplines that have been necessary and required also by this honorable committee. We have faced a very serious problem there. That problem is the powerplant. We have such a problem now that some of these plant's engines need to be replaced. They are about 20 years old. Four of them need to be replaced as soon as possible.

Senator JOHNSTON. Let me interrupt you there. We've got $1.5 million in the supplemental for the powerplant. The administration tells us they think that's sufficient. Do you concur with that?

Governor COLEMAN. Yes, sir. That $1.5 million will be very helpful to our repair. We have had power breakdowns for the last—almost a whole year. In fact, for the first time the total island was a complete blackout, and all our engines were down. So we had to exercise emergency steps to do repairs. Consequently we went into extensive repairs that included airlifting, for instance, shafts, and some spare parts into American Samoa. That's included in this $1.5 million. Also we had borrowed some engines from the Army, and these engines, we owe the Army about $300,000 out of that $1.5 million that we can pay the Army.

TOURISM

Senator JOHNSTON. Tourism is big business in American Samoa, isn't it?

Governor COLEMAN. Tourism is a young industry for us.

Senator JOHNSTON. Is a what?

Governor COLEMAN. It's a young industry. It's not very big.

But we ran into some problems. They had an airplane strike, airline strike, and as a result—first of all, the DC–10 grounding, and then after that, as we tried to recover because we were served only by DC–10 aircraft, then the strike, the airline went on strike. Then we were back again. So it cost us about 2 years of backing up. But now that we have two airlines coming in the area, it has a great potential for us.

You may recall the hotel was—over a year ago—the hotel was hit by an airplane. An aircraft went down and took away 100 rooms of our hotel.

Senator JOHNSTON. Was that insured?

Governor COLEMAN. Yes, sir, that was insured. And we're just about ready to dedicate the new wing of the hotel. So, these are the highlights I have, Mr. Chairman.

We'd be very happy to answer any questions.

Senator JOHNSTON. Thank you very much, Governor. Tahiti has a very mature tourist industry, doesn't it? Tahiti.

Governor COLEMAN. Tahiti, Saipan, the Marianas also have them.

Senator JOHNSTON. What I'm wondering is it would seem to me that American Samoa ought to have the same capacity for accommodating the tourist trade as does Tahiti.

Governor COLEMAN. Yes.

Senator JOHNSTON. I think Tahiti has been written up in more books and that sort of thing, but it has no more advantages than you have.

Governor COLEMAN. That is right. Fortunately now we have a linkage with Tahiti so that we can exchange tourists. Those who go to Tahiti but would like to see American Samoa. As you know, these islands are not all the same. You're right, the facilities in Tahiti—we'll have to expand our own facilities in order to be competitive with Tahiti.

FINANCIAL CONDITION

Senator JOHNSTON. In general, how is your financial condition in American Samoa? With the proposed reduction of $2,555,000 from the 1981 level, what will it mean in terms of services and construction?

Governor COLEMAN. It means we'll have to reduce our force in government and tighten up, overall tightening up of the governmental operations, and also the absorption of any inflationary costs by our local resources. It's an extra drain on our resources.

Some of the drains that would be coming in our resources to help pay for some of these extra costs. The 25 percent matching requirement and also the 30-percent tax cut, if this tax cut when it goes through, means a reduction because Federal laws on income tax apply to our law. It's incorporated into our system.

Senator JOHNSTON. Governor, I have a few other questions in writing here. I would like for you to answer for the record, if you would. Some are of a technical nature. If you would answer these for us.

CANTON ISLAND ADMINISTRATION

Before I submit these in writing, what is the status of Canton Island from your perspective and why is the Governor of American Samoa the administrator there?

Governor COLEMAN. May I have the question again, sir, please?

Senator JOHNSTON. I'm speaking of Canton Island. Why is the Governor of American Samoa the administrator there?

Governor COLEMAN. Well, by law the Secretary of the Interior is responsible for the administration of Canton Island, and when Canton Island was being evacuated by the Air Force, the Air Force had a facility there for the space program, but they were closing that down. But in closing it down, they were going to leave the island unattended. We felt that we still had a responsibility for the administration of this island. So in discussing the matter with the Interior Department, the Secretary of the Interior designated the Governor of American Samoa, being the closest territory to the area, and having had a connection with this island before, to administer the island on behalf of the Interior Department.

Senator JOHNSTON. And that's worked out well?

Governor COLEMAN. Yes, sir. We have three people there now. Two, in fact, a man and his wife plus the mechanic who is our representative there. But the potential for Canton Island as far as fisheries is concerned, was always something that we recognized and that we should keep a constant interest in that island.

Senator JOHNSTON. Do you have any ongoing discussions about having joint fishing arrangements between the American Marianas and the Gilbert Islands there at the Canton reef?

Governor COLEMAN. Yes; we talked with the Gilbert Islands authorities on it. We also talked with Hawaii. The concept first was to work with the State of Hawaii to see if we could use that jointly with the Gilbert Islands for a fishing stop, but the State of Hawaii felt that it did not need that stop, and the Gilbert Islands is undergoing growing pains, so to speak, so the interest was left to us. We're still hanging on in there. We have some equipment on that island, but if we left that island, the fishing vessels would just strip that island of whatever they have. We have a beautiful airfield there that the United States has built, a powerplant, and water making facilities, some computers that are used for the space program.

Mr. TUIA. I'd like to say, Mr. Chairman, that in line with the Governor's last statement, we are taking advantage of the fact that American Samoa has two canneries right now. A Governor who is representing American Samoa is working together with other Governors and leaders of the islands of the Pacific, in the Pacific basin, and this would take advantage of our canneries. Already we now have purse seiners and fishing boats by joint agreement of all the islands to bring in their fishes to supply the need of our fishing industry in American Samoa.

You will, Mr. Chairman, find an increase of exports of our fishing products from American Samoa this year over the past year.

Senator JOHNSTON. That's excellent, Mr. Speaker. I'm very glad to hear that. Please stay in close touch with us, as I know you will, here on the committee.

Thank you very much for your excellent testimony, Mr. President and Mr. Speaker. We're very pleased to have you here as well. And off the record.

[Discussion off the record.]

Mr. TUIA. I just wanted to say for the record that we also have a statement from the President and the Speaker in support of the Governor's statement on behalf of our government. We will submit it for the record and make it part of the record.

Senator JOHNSTON. That will be made part of the record.

GUAM

STATEMENT OF HON. ALBERTO C. LAMORENA, III, CHAIRMAN, SENATE COMMITTEE ON WAYS AND MEANS, TERRITORY OF GUAM

BUDGET REQUEST

Senator JOHNSTON. Next we're pleased to welcome the Hon. Alberto C. Lamorena, Chairman of the Senate Committee on Ways and Means of Guam. Senator, we're delighted to have you, sir.

Mr. LAMORENA. Thank you very much, Senator Johnston. I am also representing Governor Calvo and Speaker Thomas V. C. Tanaka, who, due to circumstances beyond their control, will not be able to attend this hearing. I will be representing them also.

Senator JOHNSTON. Along with the other witnesses, we will of course put your entire statement in the record and I hope you will highlight it and give us time for some questions.

Mr. LAMORENA. Mr. Chairman, members of the subcommittee, on behalf of the people of Guam, I'd like to express our continuing gratitude for your continuing support on Guam's budget request and territorial concerns.

Although I support the Department of the Interior's recommendation on the $10 million in capital improvements projects on Guam, we do have some recommendations on the proposed fiscal 1982 projects. We'd like to raise some other concerns that are of vital interest to the economic development of the territory of Guam.

The $10 million request will support the development of some of Guam's structural needs, water projects, commercial needs, commercial port extension, a school and other facilities needed for economic development. It should be noted that the proposed funding of $3.2 million for the commercial port were to be matched with $1.5 million in EDA funds, which may not materialize. As you know, the $1.5 EDA funds were not included in the fiscal year 1981 budget rescission request.

Also of concern to the Government of Guam is the $250,000 for economic development loan funds, which were authorized by the U.S. Congress. The original authorization was for $1 million. As you know, the economic development loan fund has established valuable assistance to those private companies that need economic assistance. In past years, the economic development loan fund has helped the various subcommittees, especially in agriculture, fisheries, and tourism, and the industrial sector. We feel that these companies have provided hundreds of jobs and employment opportunities. We'd like to have these continued.

Public Law 95–348 authorized an appropriation also of $10 million to build related facilities for Guam. Although we recognize the full amount may not be available, we are requesting that at least $5 million be used to renovate the facility of the old Guam Memorial Hospital. The present structure has many structural and electrical deficiencies. It endangers the lives of 72 long-term patients.

Also, the Government of Guam has been authorized $37.5 million over a period of about 4 years for the purpose of eliminating Guam's general fund deficits. The appropriation in this authorization is contingent on the submission of a viable deficit elimination plan by the Government of Guam. We have prepared such a plan for the Department of the Interior. This adaptation at this time is especially crucial in light of the program and tax cuts that would adversely have an effect on Guam.

We request Congress' consideration to waive the local matching requirements. The proposed tax cuts and program reductions which we estimate are in excess of $35 million would preclude the general funding from financing this required matching.

It is also noted that the U.S. Congress, under Public Law 95–134, has expressed its support on this issue. The congressaional mandate under this law gave discretionary authority to waive local matching requirements.

Again, we also see the same support being expressed by administration officials in the consolidation of grants. This hearing is for fiscal year 1982 budget requests, but I would also like to draw your attention to some major concerns which have a direct impact on the Government of Guam's continuing fight for financial assistance.

Increased military activities on Guam—we are continually pushing for a major military buildup on Guam. We support the home porting of an aircraft carrier to Guam. The amendment to Public Law 96–418—we are seeking congressional support to amend the law to allow Guam greater flexibility to entice investors through lease incentives.

We are also requesting the Department of Defense to permit the direct transfer of 11 acres of land to the Government of Guam for the implementation of container yard expansion.

On the funding for government improvement projects for fiscal year 1982, we are requesting that additional authorizations be made to support future capital improvement projects.

Also we are requesting a waiver of similar provisions of the Clean Air Act for which I think you, Senator Johnston, were a main sponsor in the waiver, sections 111 and 123 of your act ought not to be applicable to Guam. The adherence to these sections, which have been determined to be unnecessary in the case of Guam, will be too costly for the Guam power authority. These costs will inevitably be a tremendous financial burden to the Guam power authority and to the consumers of Guam.

On the Federal impact assessment of Guam, we think that under section 601 of Public Law 96–597, the territories will be provided assistance from the Federal Government. We do endorse this proposal that the Congress has made available to Guam to support funding of this proposal. We are in dire need of technical assistance in the areas of financial management, agricultural research and development, economic development, and long-term debt financing, planning studies, and energy demonstration projects.

Under the proposed bill, the Federal Government would establish a Federal Laws Commission to study their applicability to the Federal laws of Guam. This Commission, comprised of territorial representatives, we request that the U.S. Congress support, so that many of these laws that impede economic development to Guam can be removed.

In summary, we support the Department of the Interior's capital improvement funding projects with some amendments—the request of the funding for hospitals and development of technical assistance and the elimination of the general fund deficit being included as well. We are also seeking full congressional support of the concerns we have just mentioned, many of which the U.S. Congress has already begun to address through legislative actions.

These concerns, if carried out fully, will mean increased cost savings and increased revenues, and Guam being less dependent on the Federal Government for financial assistance, which we believe is in full consistency with the Nation's fiscal and economic policies.

Thank you.

OCEAN THERMAL ENERGY CONVERSION STUDY

Senator JOHNSTON. Thank you very much, Senator.

Tell me about the status of the 48 megawatt OTEC facility. Has the private consortium—how far along are they?

Mr. LAMORENA. At this point, Mr. Chairman, we are seeking congressional support for—is it OTEC we're talking about?

Senator JOHNSTON. Yes.

Mr. LAMORENA. As we know, the feasibility study is required, which will cost about $800,000. That has not been included in the fiscal year 1982 budget request. In the absence of that appropriation measure, I think the Governor is requesting that he be given the authority to reprogram these capital improvement projects for fiscal year 1981 or 1982 to finance this proposed study, from my understanding.

Senator JOHNSTON. It's just at the study stage?

Mr. LAMORENA. Yes.

Senator JOHNSTON. And they're talking about an overall cost of somewhere in the neighborhood of $150 million?

Mr. LAMORENA. $150 to $200 million.

Senator JOHNSTON. $150 to $200 million. What kind of commitment would they be talking about from Guam? Would they give you a commitment to supply power at designated rates, or are you that far along?

Mr. LAMORENA. No, we are not. We are just at this point at the feasibility study stage.

Senator JOHNSTON. I'd frankly be surprised if they could give you power at a competitive rate, considering that that is such new technology. I hope it develops. But to scale up from mini-OTEC or OTEC I in Hawaii, which is not that far along, to 48 megawatt would be a giant step. So we want you to keep us closely abreast of progress there, because of course if that falls through, you're going to have to have—you've got to have electricity, so we're going to have to have your standby plans for rehabilitation of what you've got. So keep us very closely abreast of those plans.

Mr. LAMORENA. Yes, we will.

EPA REQUIREMENT FOR SCRUBBERS

Senator JOHNSTON. Senator, as you may be aware, this committee has been quite concerned about the status of the EPA requirement that the Guam Power Authority install a scrubbersystem. I raised that question with EPA some time ago, and EPA said, "Well, we don't want to amend the law." I had it ready to go as an amendment to exempt you from that, because those prevailing winds take that effluent air emissions offshore. EPA has said, in effect, that they weren't going to require that; they were just going to relax that requirement.

What is the present status of that?

Mr. LAMORENA. Well, at this point, we are negotiating with EPA on exempting Guam. I really don't know what decisions have been made as far as exempting Guam specifically from the Clean Air Act.

Senator JOHNSTON. You know the Environment and Public Works Committee of the Senate is holding hearings now on the renewal of the Clean Air Act. Have you submitted testimony to them?

Mr. LAMORENA. No; we have not.

Senator JOHNSTON. I would strongly recommend to you that you get a statement to them asking for an exemption and setting forth what your case is there, because it seems to me that that is a needless expenditure which would greatly increase your costs without any real reason in terms of air quality.

Mr. LAMORENA. That's right. The economic impact is a lot greater than the environmental.

Senator JOHNSTON. Let me say, to the Department of the Interior witnesses, we would appreciate it if you'd do the same. If you concur, submit that along with Guam's statement to the Committee on Environment.

EFFECT ON GUAM'S BUDGET IF TAX CUT

Do you anticipate, Senator, that Guam will have a balanced budget in fiscal year 1982?

Mr. LAMORENA. For fiscal year 1982, it's hard to say, Senator. There are a lot of variables that are involved as far as the potential revenue that you might receive in 1982. Of course, two of them are completely out of our hands at this point. One is, of course, potential budget cuts made by the U.S. Congress and the possibility of a tax cut that might be passed by the U.S. Congress. We estimate that if the 30 percent tax cut is passed and the full impact of the budget cuts is passed by the U.S. Congress, we anticipate losing about $30 million in direct Federal revenue, so therefore it will have a significant impact as far as getting a balanced budget is concerned.

We are at least making significant cuts as far as the fiscal year 1982 budget proposal is concerned. The Governor has submitted to the legislature a proposed budget which would reduce the general fund budget by at least 8 percent, which is about $11.6 million. It's going to be very difficult.

As you know, Guam hasn't very much internal revenue, so we are affected by any tax cuts as well. If the tax cut is not implemented, I think that we could probably have a balanced budget; however, we are making attempts to cut our budget as well. As you know, Guam's general fund budget—75 percent is based on personnel benefits, which is salaries, so therefore it's very difficult to cut corners at this present time.

Senator JOHNSTON. We will surely have a tax cut this year. Now the question is how much, for how many years it will last, but you can certainly bank on a tax cut. The question is whether it will be in the neighborhood of $52 or $41 billion, but it will be in that neighborhood certainly for fiscal year 1982. Not all of that will be in personal tax cuts, of course. But if I were a budget planner for Guam, I would plan on a 5-percent tax cut for fiscal year 1982. I don't think it would be larger. It could conceivably be smaller. But I think as far as the personal tax cut is concerned, you can plan on that.

There should be also other elements of it for fiscal year 1982. The rapid depreciation—that should not affect you that much. Other elements like the marriage penalty should not affect you. I would think certainly the personal tax cut would. But I would plan, if I were you, on a personal tax cut in the neighborhood of 5 percent for fiscal year 1982. And if we do less than that, then, in that chance, you'd be in pretty good shape.

Senator, with respect to your power generation, what's the condition of your facilities including transmission?

Mr. LAMORENA. On the Guam Power Authority?

Senator JOHNSTON. Yes.

Mr. LAMORENA. At this point in time, I really can't answer that question, as far as an expert.

Senator JOHNSTON. Well, let me give you that question in writing then; perhaps you can supply that for the record.

[The information follows:]

GUAM POWER AUTHORITY

Information on the condition of power facilities and transmission lines is contained in the answers to the additional committee questions for Guam.

EDA FUNDS FOR CONTAINER YARD

Senator JOHNSTON. You've proposed to expand your port container yard at Apra harbor. Of this total, about $1.5 million of the 50 percent matching loan requirement is assumed to be made available through an EDA grant.

Mr. LAMORENA. That is correct.

Senator JOHNSTON. Has EDA made any commitment to you, verbal or otherwise?

Mr. LAMORENA. As you know, under the fiscal year recision budget request, the EDA has been reduced from $300 million down to $160 million. From my understanding, the $1.5 million grant that was initially promised to Guam was not included as part of that request. We are asking Congress to have that reinstated. We feel this is a grant that would help Guam develop economically, and I would consider it as more of an investment, more than an assistance-type program.

We feel at this time the container yard facility of the Port Authority of Guam is wholly inadequate to meet the present needs of Guam and would, of course, be wholly obsolete for further economic development in the future. As you know, the port of Guam can only officially handle about 10,000 containers. At this present time, we're handling about 23,000 containers. The Navy has leased out 11 acres to meet this need for expansion; however, we need the $1.5 million EDA loan to at least initiate the construction for such an expansion of the container yard.

TEXAS INTERNATIONAL TAKEOVER OF CONTINENTAL AIRLINES

Senator JOHNSTON. One final question, Senator. Are you concerned about the possible takeover by Texas International of Continental Airlines. I know TI has said that they would continue service. Are you satisfied with that commitment?

Mr. LAMORENA. We are concerned if it disrupts the present services that Continental is giving to the people of Guam and to the people of Micronesia. We feel that the current service being offered by Air Micronesia, also known as Continental Airlines, is helpful to the present and potential development of Guam and the rest of the islands, and we are concerned that if Texas International does curtail—if it does take over Continental Airlines and they do curtail some of the routes that they do have in Micronesia, yes, we would be very concerned about the takeover at this point.

Senator JOHNSTON. Frankly, I think that Air Mike has earned the right to serve out there.

Mr. LAMORENA. They've done a very good job.

Senator JOHNSTON. They've done a good job, and they've suffered losses through the years and built up the route; it seems to me they're entitled to it. Whatever happens, I hope either they can continue it and certainly that Guam and the other parts of Micronesia will continue to be adequately served, because that's your key.

PREPARED STATEMENTS

Thank you very much, Senator. Please, give our regards to everyone in Guam.

Mr. LAMORENA. Thank you very much.

[The statements follow:]

STATEMENT OF GOVERNOR CALVO, TERRITORY OF GUAM

Mr. Chairman, members of this Subcommittee, once again, we appear before you to express the gratitude of the People of Guam for your continuing support and concern for Guam's infrastructure needs and economic problems. We are also pleased to inform you that many of the projects that you have supported in the past are now being constructed or are in their final phase of construction design. Through the efforts of the members of this Committee, other members of the U.S. Congress and the Department of the Interior, we will soon be seeing new and renovated schools, a new penitentiary, and numerous water projects completed, all of which will greatly benefit the People of the Territory of Guam. Again, however, much have yet to be accomplished in order to meet the capital improvement project needs for Guam. For this reason, we are appearing before you to testify in support of Guam's FY 1982 budget request and to express our concerns on other matters of economic interest to the Territory of Guam.

FY 1982 Budget Request

Government of Guam had originally requested over $24.8 million for capital improvement projects of which $12.2 million have been approved by the Department of the Interior. However, in the final submission by President Carter, the request was further reduced to $12 million and it now stands at $10 million as submitted by President Reagan. We recognized that funding is tight throughout the Federal Government. We do support the President's plan to try and reduce Federal spending. However, we think that in the process of reducing Government expenditures, island territories should not be held to a criteria applied to mainland states. Too often the criteria used for Mainland United States are not applicable to island Territories because the island's unique problems and stages of development. We hope that in the implementation of the President's Economic Recovery Plan, this concern should be addressed. Guam's isolated geographic location, limited resources and the application of Federal laws which impede economic growth and development should all be considered when Federal funds are to be reduced.

The proposal to increase the local matching requirements from 10% to 25% for the projects being requested in FY 1982 will be financially prohibitive to Government of Guam. The Government of Guam revenues cannot provide the additional funds especially in light of the proposed cutbacks on the Federal programs that Guam now administers. We know that some of the programs although reduced or eliminated by the Federal Government can not be immediately terminated and may have to be continued for awhile with local funds. Failure to do so can be economically and socially disruptive to the community. It is also ironic that when the U.S. Congress passed U.S. Public Law 95-134, one of the provisions of that law is to allow discretionary authority to department heads to waive local matching requirements because of the financial hardship they have on the coffers of the Territorial Governments. Beginning fiscal year 1981, however, local matching on capital projects was a condition to getting funding for these projects. Now, in FY 1982, not only did the Government of Guam must match the funding for these projects, but also, the local match have been increased by 15% after cost estimates have been prepared.

We are appealing to you and other members of Congress to waive the matching requirements. Give us the grant at whatever level you think is adequate and let us be concerned of the balance of costs of these projects. We think that this approach is consistent with the prevailing philosophy of passing greater responsibility to state and local governments.

Fiscal year 1982 budget request as submitted by the Administration will provide for a $10 million funding for eight projects. These are Economic Development Loan Fund - $250,000; Water Systems - $1,125,000; Six Water Wells - $877,000; Commercial Port Expansion - $3,225,000; School Renovation -$1,008,000; Crime Laboratory - $112,000; Parks Building - $225,000; and Bridge Construction - $3,225,000 for a total of $10,047,000. Some of these projects have been requested in previous years but were not funded and are now being resubmitted for funding. Highlights of the projects being requested are shown below:

Economic Development Loan Fund (EDLF) - $250,000

The original request submitted by Government of Guam was $1,000,000 but was reduced to $250,000. The request will provide for economic development loans to potential businesses that would provide jobs in the community.

Presently, there is approximately $4.9 million funding requirements for approved loans for FY 1982. The proposed $250,000 funding is far too short from what Guam really needs.

Water Systems and Six Wells - $2,002,000

These projects are essential in overall plan to continue to improve the water distribution system for the Territory of Guam. These projects are all geared toward meeting the increased water requirements for the island efficiently and effectively as indicated in the Guam's water facilities master plan.

. Facilities' Improvement and Construction - $7,795,000

These include renovation of five junior high and two senior high schools (with enrollment in excess of 15,000 students); renovation and expansion of the existing crime laboratory; expansion of the Commercial Port container yard; construction of the Parks and Recreational building; and construction of bridges. The implementation of these projects would provide for the health, safety and educational welfare of our students; development of our much needed commercial port facilities as part of our economic development programs; and construction of essential facilities needed in the efficient and effective delivery of government services.

Detailed information on each of these projects have been prepared and submitted to the Department of the Interior. As indicated earlier, the original request was more than twice the amount finally approved by the Administration. Although we recognized that budget cuts will be necessary, we humbly request that the U.S. Congress consider funding a request for the Guam Memorial Hospital facility under the $10 million authorization request under U.S. Public Law 95-355. A separate budget justification has been prepared and is being presented to you at this time. This request is critical to the delivery of health care services to the People of Guam.

Other Concerns

Although this is a hearing for FY 1982 budget request, we would like to bring to your attention some major concerns which directly or indirectly impact on Government of Guam's continuing request for financial assistance. These concerns are as follows:

1. Increased military activities on Guam.
2. Change in the provisions of the Cabras Island land transfer.
3. Funding authorization for FY 1983-1986 capital improvement projects.
4. Guam Power Authority waiver on Sections 111 and 123 of the Clean Air Act.
5. Implementation of Section 607, U.S. Public Law 96-597 relative to the elimination of GovGuam's General Fund deficit.
6. Federal impact assessment on the effects of the Economic Recovery Plan on the Territories.
7. Request for Technical Assistance under PL 96-597 and review of Federal Constraints.

Most of these concerns can be addressed with little or no appropriations but can mean substantial savings and revenues to Guam.

Increased Military Activities

First of all, the People of Guam is thankful to learn that the U.S.S. San Jose will be homeported on Guam as part of the President's plan to strengthen the Nation's defense posture in this part of the world. This action will not only give the People of Guam a sense of pride for being part of this military buildup, but also, will provide additional revenues to Guam. We hope that the homeporting of the U.S.S. San Jose is only the initial step towards homeporting an aircraft carrier. We all know that homeporting an aircraft carrier can be a great boost to Guam's economy.

Amendment to U.S. Public Law 96-418

Government of Guam appeals to the U.S. Congress to reconsider passing an amendment that would amend Section 818(b)2. This section provides that the properties to be transferred under this law can only be sold or leased for "a monetary consideration equal to our in excess of the market value (at the time of the disposal) of the property concerned." We believe that this provision will deter potential developers from participating in the development of these properties. The costs of these properties would be economically unattractive to potential investors. Again, Guam is constrained by the Federal Government to develop its natural resources so that it can be more economically independent and less reliant on Federal handouts.

We recommend that Government of Guam should be given the lattitude to negotiate the price of these properties at a price that would yield maximum benefits to the People of Guam.

Capital Project Funding Authorization for Future Fiscal Years

The funding authorizations for capital improvement projects will be exhausted with the FY 1982 appropriations. As mentioned earlier, the funding for these projects is crucial for the development of Guam and its economy. Therefore, we are requesting that the U.S. Congress enact an authorization measure for at least two years worth of capital project funding. We suggest that at least $25-30 million be authorized for facilities development for Guam. All of the projects to be funded will come from the list of projects indicated in the 10-year CIP plan jointly prepared between Government of Guam and the Federal Government.

Guam Power Authority's Request for Exemption on some Provision of the Clean Air Act

This issue has been raised since October 16, 1979 when H.R. 3756 was being heard by the Committee on Energy and Natural Resources. During that hearing, Senator J. Benett Johnston requested the views of the Department of the Interior on a proposal before the Committee to exempt the Guam Power Authority (GPA) from Sections 111 and 123 of the Clean Air Act.

The Department of the Interior sent a letter to the Administrator of Environmental Protection Agency in response to the Senator's request. The Department of the Interior supports the exemption from environmental and a financial standpoint. Both the Department of the Interior and Guam Power Authority (GPA) feels that because of prevailing winds that carry emissions from Guam power plants into the air above the uninhabited Philippine Sea, no populations suffer from Guam's non-compliance with Sections 111 and 123 of the Clean Air Act. During the infrequent periods when winds blow the power plant fume over Guam, the power authority switches to low-sulphur fuel and meets air quality standards. Furthermore, both agencies feel that enforcement of Sections 111 and 123 of the Clean Air Act would cost GPA an annual cost in excess of $20 million to construct a scrubber. GPA cannot implement these requirements without over-burdening the consumers with increased rates in power which would possibly result in jeopardizing the $36 million loan from the Federal Government. Unfortunately, since 1979, no resolution was taken to exempt GPA from the subject provisions. Again, we are appealing to you and other members of Congress to provide a legislative remedy to protect the Guam Power Authority from non-compliance penalties.

Implementation of the Deficit Elimination Plan Pursuant to U.S. PL 96-597

The U.S. Congress under Section 601, U.S. Public Law 96-597, authorized a $37.5 million over a period of four years to assist Government of Guam in the elimination of its General Fund deficit. As a prerequisite to receiving these funds, Government of Guam shall submit a deficit elimination plan to be approved by the Secretary of the Interior in consultation with the Secretary of the Treasury. This plan shall indicate that beginning FY 1986, Government of Guam would have eliminated its General Fund deficit. We have prepared a plan with specific tasks identified to meet our objective to eliminate the deficit. We think that the plan is a viable one and once implemented, could achieve the set objective. Therefore, we request that an appropriation of $15 million be made to Guam in FY 1982 to implement the plan. This amount is consistent with the scheduled fund allocation in Section 607, of PL 96-597.

Let me also say that many of the action plans indicated in the Deficit-Elimination Plan have been implemented. Just to mention a few, I have implemented an austerity program; reduced the operational budget for FY 1982 below that of FY 1981; and the Legislature has supported a resolution to eliminate the deficit by 1990 and has enacted a "Sunset" bill that would phase out some existing departments/agencies unless adequately justified. There is also a growing consciousness among legislators that before any appropriations can be made, source(s) of funding for the appropriations must first be identified.

We sincerely think that with the commitment from the U.S. Congress to fully carry-out the intent of PL 96-597 and the local government's commitment, Government of Guam's General Fund deficit could be eliminated under our proposed plan.

Federal Impact Assessment on Proposed Cutbacks

Although GovGuam is very much supportive of the proposed program cutbacks in order to control inflation, it is important that we point out the deleterious effects that these cutbacks would have on Guam. It is estimated that over 700 jobs will be affected, over $30 million of lost income tax revenues for the next 3 years would result, over $8 million of program funding will be eliminated, and in general, the first few years of implementation of the President's Economic Recovery Plan would present a tremendous financial hardship on the People of Guam.

We think that the Federal Government in applying these cutbacks should use a different criteria for the territories from the criteria used for the states. Guam, unlike many states and like many Territories is fairly new in the administration of these programs. Many of the existing Federal programs on Guam have yet to reach the level of sophisticated development that exists in most states so that a reduction or elimination can be disastrous on the program itself (if reduced) or can be devastating to recipients of the programs.

Therefore, we sincerely believe that the Federal Government should seriously consider the impact of these cutbacks and alternatives to minimize the effects of them. We think that the approach being undertaken by the Federal Government on Puerto Rico should be extended to Guam and the other Territories.

Support for Technical Assistance under U.S. Public Law 96-597

Under Section 601, U.S. Public Law 96-597, the territories will be provided technical assistance from the Federal Government. We fully endorse this proposal that Congress has made available to Guam. We support the funding of this proposal. We are in dire need to receive technical assistance in areas of financial management, agricultural research and development, economic development planning, long-term debt financing planning, studies, and demonstration projects.

Under a proposed Bill, the Federal Government would establish a Federal Laws Commission to study the applicability of Federal Laws to Guam. This Commission was to be comprised of Territorial representatives. We request that the U.S. Congress support the enactment of this Commission so that many of these Federal Laws that impede economic development can be removed.

In summary, we support the Department of the Interior's CIP funding proposal but with reservations as mentioned earlier.

We request that the funding request for the hospital and the elimination of the General Fund deficit be included. We are also requesting for Congressional support on the concerns we have mentioned, many of which the U.S. Congress have already initiated some legislative actions. Many of these concerns, if carried out fully, would not require appropriations but can mean substantial cost-savings and revenues to Guam. This would result in Guam being less dependent on the Federal Government for financial assistance which we believe is consistent with the Nation's fiscal and economic policies.

GOVERNMENT OF GUAM
DEFICIT ELIMINATION PLAN
FISCAL YEARS 1982 - 1985

INTRODUCTION

This plan is prepared pursuant to Section 607 of U.S. Public Law 96-597 which provides a $37.5 million authorization (to be followed by an appropriation) to assist the Government of Guam in eliminating its General Fund deficit by October 1, 1985.

The best indicator of the overall financial state of the Government of Guam is the status of the General Fund. There are varying definitions of the General Fund balance and their significance largely depend upon the user's need. For our purpose, the Government of Guam has opted to use the "unappropriated fund balance" when making specific reference to the General Fund balance. The "unappropriated fund balance" represents the amount of revenues available for appropriation and obligation. This balance is indicative of GovGuam's ability or inability to cover the cost of its obligations and appropriations, as passed by the local legislative body.

The Government of Guam's financial difficulties began abruptly in fiscal year 1974 when it generated a deficit of $17 million. The deficit rose the following year to $39.8 million and steadily grew to $51 million in FY 1976. In fiscal years 1977 and 1978, the deficit continued at an upward trend to $54 million and $63.6 million, respectively. The perpetuation of GovGuam's growing fund deficiency during this two year span is due to the expansion of GovGuam's total workforce and increased employee salaries and retirement benefits which were granted in FY 1978. In its FY 1979 report, the U.S. Government Comptroller reported a drop in the Government of Guam's deficit to $53.5 million. Based on the Department of Administration's unaudited financial statements, the U.S. Government Comptroller estimates at year-end unappropriated fund deficit of $67.7 million for FY 1980. The Government of Guam projects that this deficit will increase by $10 million or $77.7 million at the end of FY 1981. This increase is attributed to decrease in revenues and increase in expenditures expected in FY 1981. It is noted, however, that although the General Fund deficit will continue to increase during the first two years (FY 1982 - FY 1983), cost cutting programs and other steps that will be taken by the Government of Guam plus improved economic conditions will change the deficit trend. However, because of the many economic uncertainties, adjustments on the plan may be necessary. Therefore, it is hoped that the disbursement of federal funds to finance the General Fund deficit is not contingent upon GovGuam's ability to achieve its quarterly and annual goals but rather on its ability to ultimately eliminate the deficit by October 1, 1985.

Inflation continues to be a major problem facing Guam's economy. Guam's remoteness and heavy reliance on imported goods result in a higher cost of living than that of most U.S. mainland jurisdictions. Economic conditions that have affected the United States and Japan have similar devastating effects on Guam's economic posture. Light industrial development is minimal at this time because of the lack of skilled labor and raw materials.

Despite the aggressive skill training programs offered by Guam's Community Career College, this Territory still relies on imported labor but on a more limited scale. As a consequence of this, much local revenues are not circulated on island but are lost to the imported laborers' countries of origin. Constraints imposed by federal laws and regulations also impede Guam's economic growth and development. Our limited revenue base compounded by the increasing costs in providing needed services make it necessary for the Government of Guam to seek federal funding assistance to resolve its financial plight. The other components of this plan depict the desired interaction that is necessary between all branches of the Government of Guam to effectively execute and fulfill the requirements of Public Law 96-597.

OBJECTIVE

The objective of this plan is to establish a viable program which will enable the Government of Guam to systematically address and eventually eliminate the General Fund deficit by October 1, 1985 without jeopardizing the quality of public services provided to Guam's residents. This plan clearly defines the specific roles and responsibilities of each branch (judicial, executive, and legislative) of the Government of Guam. Total commitment is needed if the Government of Guam is to achieve solvency by October 1, 1985 and to, henceforth, uphold and maintain fiscal integrity in conducting governmental operations.

The following assumptions were made in the formulation of this plan:

1. There will be no major change in the political status of the Government of Guam that will adversely change the relationship between the Government of Guam and the Federal Government.

2. There will be some drastic changes in the organizational structure of the Government of Guam.

3. The U.S. Congress will enact legislation to provide for the implementation of President Reagan's "Economic Recovery Plan" which greatly affects Government of Guam.

4. The U.S. Congress will appropriate $37.5 million pursuant to Section 607 of U.S. Public Law 96-597, to assist the Government of Guam in eliminating its General Fund deficit.

5. There will be a concerted effort by all branches of the Government of Guam to concommittantly assume and carry out their responsibilities as called for by the plan.

6. The Guam legislative body will exercise fiscal discipline in appropriating funds for territorial programs and projects. In the absence of available revenues, the Guam Legislature will enact legislation to authorize rather than appropriate funds in order to minimize the impact of legislative actions on the General Fund status.

7. There will be a concerted effort by all branches of the Government of Guam to:

   - strictly adhere to the Governor's Austerity Program.
   - exercise restraint in expending funds appropriated by the Guam Legislature.
   - assess existing programs/activities and eliminate those that offer the least benefits to the community.
   - strengthen controls and accountability of federal grants to facilitate timely receipt of reimbursements to the Government of Guam.
   - gradually shift the emphasis on employment from the Government of Guam to the private sector.

8. There will be positive steps taken to bring about a conducive business climate. Such steps include:

   - provide adequate infrastructure essential for business operations such as water, sewer, power, and telephone services.
   - lifting of federal constraints that are excessive, burdensome and counter-productive and therefore, retard Guam's economic growth.

9. There will be increased military activity to be brought about by the homeporting of the U.S.S. San Jose and other ships to Guam.

ACTION PLAN

The Governor of Guam is cognizant of the need to alleviate the Government of Guam's financial position and has already taken some constructive steps to address this problem. The Governor recently disapproved salary increase proposals that would provide for a 30% salary adjustment for Government of Guam workers. Enactment of the proposal would mean a substantial increase in deficit-spending to the point of bankruptcy. The Governor has consistently taken the same action on new appropriation measures for non-critical projects/programs. For FY 1982, the Governor is programming an operations budget below that of FY 1981. A total of 202 vacant positions were cut and funding for logistic support was reduced across-the-board.

The Government of Guam will initiate implementation of its action plan for the period October 1, 1982 through October 1, 1985 using, as a base, the estimated $77.7 million General Fund deficit for year ending September 30, 1981. The action plan consists of three (3) basic elements: (1) administrative; (2) legislative; and (3) Federal Government requirements. These requirements define specific tasks/actions that the Governor, the local Legislature, and the Federal Government must undertake during this four-year span in order to eliminate the deficit by October 1, 1985. Each task is specifically described. Attachment A reflects timetables for accomplishing each task, how each task relates to the overall objective of this plan, and the name of the implementing department/agency.

Administrative Requirements

1. Enforce and monitor compliance with the Governor's Austerity Program.
2. Establish and develop the data base requisite to improving budget and revenue projection capabilities and effective resource management. Coordinate efforts between the Legislative and Executive branches on synchronizing revenue/expenditure projections.
3. Continue to refine the BACIS system to ensure that the financial data provided is timely, reliable, and is in the form needed for decision-making purposes. Strengthen the budgeting and accounting systems by refining existing procedures and techniques.
4. Consolidate preventive maintenance on equipment, and printing and duplicating needs of the Government of Guam.
5. Propose legislation to consolidate similar functions/programs and to eliminate functions/programs that are not cost effective and offer the least benefits to the community.
6. Strengthen federal grants management to insure that only critically needed federal programs are continued. A procedure will be established to provide for the timely and adequate reporting of program expenditures so that the General Fund is promptly reimbursed.
7. Develop an updated indirect cost plan to enable GovGuam to properly charge for administrative support services rendered to locally administered federal programs.
8. Revitalize and augment the financial and management auditing capabilities of the Government of Guam.
9. Institute a fixed asset accounting system for the purpose of strengthening inventory control and the management and maintenance of the Government of Guam's fixed assets.
10. Identify and cancel inactive and non-critical appropriations particularly those that cannot be funded by the Government of Guam's limited revenues.
11. Implement government-wide Program, Planning, and Budgeting (PPB) and/or Zero Base Budgeting (ZBB) concept so that government agencies are given wide latitude in determining their funding priorities. This departure from the traditional line-item budgeting approach forces departments/agencies to manage their limited resources so that optimum efficiency and effectiveness is achieved.

Legislative Requirements

1. Enact legislative measures:

   (a) to carry out the provisions of U.S. Public Law 96-597;

(b) to have a balanced budget and to provide for an automatic deappropriation of appropriations that cannot be supported with the Government of Guam's available revenues.

(c) in a form of a resolution to the U.S. Congress to amend the Organic Act to set limitations on appropriating funds.

(d) to consolidate similar functions/programs within the Government of Guam and to eliminate those functions/programs that are not cost effective and contribute the least benefits to the community.

(e) to remove the autonomy status of certain ailing autonomous departments/agencies to enable the Executive Branch to closely monitor their resource management activities and ultimately reduce their dependency on the General Fund.

2. In the absence of adequate revenues, the Legislature shall authorize rather than appropriate funds in order to minimize the impact of legislative measures on the General Fund balance.

3. Enact legislation that would limit the number of legislative sessions thus cutting down operational expenditures of the Guam Legislature.

4. Enact legislation that would reassess the GEDA tax incentives program for businesses doing business on Guam.

5. Enact legislation that would provide for increases in regulatory fees and implementation of new charges for services rendered by government programs.

Federal Government Requirements

1. Congress shall appropriate the $37.5 million authorized in Section 607 of U.S. Public Law 96-597 to assist GovGuam in the elimination of its General Fund deficit.

2. The U.S.S. San Jose and other ships are homeported to Guam and should stimulate increased military activities assuming that President Reagan's tax exemption proposal for military personnel is not implemented.

3. The Federal Government shall permit the Government of Guam to use federally-owned lands for economic development.

4. The local matching requirement for federally-funded capital projects /programs shall be waived.

Objectives/Goals	Required Task	Fiscal Year (In Quarters)																Implementing Dept./Agency	Potential Savings
		1982				1983				1984				1985					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Reduce the General Fund deficit of the Gov't of Guam	Enforce & monitor compliance with the Governor's Austerity Program. The BBMR will institute controls needed to contain expenditures for GovGuam's personnel, travel, and contractual needs.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Bureau of Budget	
	Impose & maintain reserves on the operations budget of all departments and agencies. These funds, while in reserve status, become unavailable for obligation/expenditure.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Bureau of Budget	
	Strengthen audit and internal control mechanisms to enhance operational efficiency and effectiveness by eliminating the wasteful practices and procedures of the Government of Guam.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Bureau of Budget	
	Identify similar programs/functions and recommend to eliminate those that are ineffective or provide the least benefits to the community. (1) The Governor has supported the enactment of legislation to implement a "Sunset																		

Objectives/Goals	Required Task	Target Year (In Quarters)																Implementing Dept./Agency	Potential Savings
		1982				1983				1984				1985					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	Law". This forces departments/																		
	agencies to expire if their																		
	existence cannot be justified.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X		
	(2) Initiate efforts to further																		
	consolidate business office,																		
	personnel management, accounting,																		
	and procurement functions through-																		
	out the Government of Guam.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Governor's Office Guam Legislature	
	Identify & cancel dormant appropri-																		
	ations that cannot be supported by																		
	GovGuam's General Fund cash																		
	position. These appropriations																		
	represent potential obligations/																		
	expenditures and, therefore,																		
	increase the financial liability																		
	and "paper deficit" of the																		
	Government of Guam.			X				X	X			X				X		Dept. of Administration Bureau of Budget Guam Legislature	
	Resort to bulk purchasing for line																		
	departments/agencies. Costs could																		
	be reduced by consolidating																		
	GovGuam's procurement and service																		
	needs, particularly in the area of																		
	equipment maintenance, printing,																		
	and duplicating.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Dept. of Admin. (Supply) All line depts./agencies	

Objectives/Goals	Required Task	1982				1983				1984				1985				Dept./Agency	Savings
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	Implement an equipment reconditioning program to refurbish and reissue old but usable equipment to GovGuam departments/agencies.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Dept. of Administration	
	Take advantage of vendor trade discounts because of the departments/agencies' ability to pay their obligations within 10-15 days after receipt of invoice/billings.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	All line depts./agencies	
	Regulate spending activities of those autonomous departments/agencies receiving General Fund subsidies. The Governor will propose legislation to remove the autonomy status of the Guam Memorial Hospital and the Public Utility Agency of Guam so that their resource management practices can be closely monitored.	X	-	-	-	X												Office of the Governor Bureau of Budget Guam Legislature	
	Institute fixed asset accounting system. GovGuam's total asset inventory is grossly understated in GovGuam's financial statements. The proper valuation and record-																		

Objectives/Goals	Required Task	1982				1983				1984				1985				Dept./Agency	Savings
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	ation of GovGuam's assets inventory																		
	will strengthen inventory control																		
	and the management and maintenance																	Dept. of Land Management Dept. of Administration	
	of such assets.	X-	---	---	---	---	---	---	-X										
Balance the General Fund budget of the Gov't of Guam	Strengthen revenue/expenditure projection capabilities.																		
	(1) Establish adequate data base to use as a basis for making realistic projections.	X-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X		
	(2) Work closely with the Legislative Branch to synchronize revenue/expenditure estimates.	X-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X	Bureau of Budget Dept. of Revenue & Taxation Dept. of Administration Guam Legislature	
	Request that the legislature enact a measure which would require Guam's legislative body to pass balanced budgets based on revenue estimates agreed upon by the Executive and Legislative branches.	X-	-X															Bureau of Budget Office of the Governor	
Improve revenue posture of Government of Guam	Strengthen revenue collection program: (1) GovGuam will automate tax receivable records to enhance the credibility & integrity of GovGuam's receivable accounts and to facilitate the timely collection of tax revenues.	X-	---	---	---	---	---	---	-X									Dept. of Administration Dept. of Revenue & Taxation	

Objectives/Goals	Required Task	1982				1983				1984				1985				Implementing Dept./Agency	Potential Savings
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	(2) Revenue-generating agencies																		
	will administratively create																		
	organizational changes to address																		
	chronically delinquent receivables	X	-	-	X														
	Develop Guam's Indirect Cost Plan																		
	(1) GovGuam will contract for																		
	consultant services to provide for																		
	the development of Guam's Indirect																		
	Cost Plan.	X																	
	(2) GovGuam will charge for																		
	administrative support services																		
	based on determined indirect cost																		
	rates.		X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Bureau of Budget PH&SS Dept. of Education	
	Strengthen federal grants management																		
	in order to minimize unallowable																		
	costs.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Office of the Lt. Gov. (Fed.) Bureau of Budget Dept. of Administration	
Enhance the efficiency and effectiveness of GovGuam's budget & accounting system	Refine the BACIS System to timely																		
	and accurately produce financial																		
	data critical to effective and																		
	efficient resource management.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Bureau of Budget Dept. of Administration	
	Assimilate into GovGuam's budgeting																		
	cycle the PPBS and/or ZBB system																		
	so that departments/agencies are																		
	forced to efficiently and																		

bjectives/Goals	Required Task	1982				1983				1984				1985				Dept./Agency	Savings
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	effectively manage their limited																		
	resources.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Bureau of Budget Legislature All line depts./agencies	

Objectives/Goals	Required Task	1982				1983				1984				1985				Dept./Agency	Savings
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
Reduce the General Fund deficit of the Government of Guam	1. Enact legislation:																		
	(a) to mandate territorial																		
	implementation of U.S.																		
	P.L. 96-597.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Guam Legislature	
	(b) to reduce the number of																		
	legislative sessions held																		
	annually, hence, reducing																		
	expenditures for legislative																		
	operations.	X	-	-	-	-	-	-	-	-	-	-	X					Guam Legislature	
	(c) to provide for the automatic																		
	cancellation of dormant																		
	appropriations as requested																		
	by the Governor. All appro-																		
	priations, whether expended																		
	or not, directly impact on																		
	increasing the General Fund																		
	deficit.	X	-	-	-	X												Guam Legislature	
	(d) to remove the autonomy status																		
	of certain departments/agen-																		
	cies to enable the Executive																		
	Branch to closely monitor																		
	their resource management																		
	activities and ultimately																		
	reduce dependency on the																		
	General Fund.	X	-	-	X													Guam Legislature	

Objectives/Goals	Required Task	1982				1983				1984				1985				Dept./Agency	Savings
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	2. Authorize rather than appropriate funds in the absence of adequate revenues.. Authorizations, unlike appropriations, have an immediate and direct impact on the General Fund status.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Guam Legislature	
mprove Government of uam's revenue posture	Enact legislation to:																		
	(1) Reassess the GEDA tax incentives program for qualifying businesses on island. Under this program, tax rebates are granted to some businesses to enable them to survive their first few years of operation and to stimulate Guam's economy by providing job opportunities to local residents. Efforts will be made to modify and strengthen program eligibility requirements so that the best interest of the Government of Guam is protected.	X	-	-	-	X												Guam Legislature	
	(2) Implement new charges for government services.	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	X	Guam Legislature	

Objectives/Goals	Required Task	Fiscal Year (In Quarters)																Implementing Dept./Agency	Potential Savings
		1982				1983				1984				1985					
		1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4		
	The U.S. Congress shall enact legislation																		
	(1) to appropriate a total of $37.5 million to Guam pursuant to Section 607 of U.S. Public Law 96-597.	X																	
	(2) to waive the local matching requirements for federally-funded capital projects and programs.	X-	---	---	-X														
	(3) to make federally-owned lands available to Government of Guam for economic development.	X-	---	---	-X														
	The Department of Interior will disburse funds appropriated to eliminate the Government of Guam's General Fund deficit as provided for by law.	X-	---	---	---	---	---	---	---	---	---	---	---	---	---	---	-X		

GOVERNMENT OF GUAM
PROJECTED GENERAL FUND STATUS
FISCAL YEARS 1982 - 1985
(IN THOUSANDS OF DOLLARS)

	1982	1983	1984	1985
Beginning General Fund Balance	($ 77,700)	($ 58,934)	($ 42,480)	($ 25,320)
Revenue:				
Estimated Revenues	154,039	156,081	165,446	178,682
Add: Indirect Cost Allocation	1,000	800	800	800
Adjusted Revenue Estimates	$155,039	$156,881	$166,246	$179,482
Expenditures:				
Estimated Appropriations	159,939	160,300	165,145	170,137
Less: Appropriation Reserves	10,666	16,673	17,239	22,231
Deappropriations	6,000	1,000	1,000	1,000
Estimated Expenditures	143,273	142,627	146,906	146,906
General Fund Balance prior to Adjustments	11,766	14,254	19,340	32,576
Adjusted General Fund Balance	(65,934	(44,680)	(23,140)	7,256
Adjustments to the Deficit:				
Add: Deficit Financing Allocation	15,000	11,000	7,500	4,000
Deduct: Unappropriated Liability to the Retirement Fund	8,000	8,800	9,680	10,648
Ending General Fund Balance	($ 58,934)	($ 42,480)	($ 25,320)	$ 608

GOVERNMENT OF GUAM
REVENUE AND APPROPRIATION PROJECTIONS
FISCAL YEARS 1982 - 1985
(in Thousands of Dollars)

	1982	1983	1984	1985
Local Revenues				
Taxes:				
Income:				
Collected by GovGuam	$ 70,000	$ 72,100	$ 76,417	$ 82,491
Collected by U.S. Gov't.	19,500	20,085	21,688	23,809
Business Privilege				
Gross Receipts	33,240	33,578	36,262	40,762
Alcoholic Beverages	935	763	992	1,022
Tobacco	572	589	607	625
Real Property	3,278	3,376	4,810	6,000
Other:				
Excise & Admission	319	329	338	349
Use	466	499	524	550
Others	122	126	129	133
Total	128,432	131,445	141,767	155,741
License & Permits:				
Business	491	511	526	542
Motor Vehicle Branch	652	691	711	732
Other	167	172	177	182
Total	1,310	1,374	1,414	1,456
Fines & Forfeitures	495	515	530	546
Interest & Rental				
Interest	1,583	1,662	1,712	1,763
Rental	18	18	18	18
Total	2,096	2,195	2,260	2,327
Immigration Fees	94	100	105	108
Charges for Current Services				
General Government	326	342	353	363
Passport Office	105	111	117	120
Public Safety	184	193	199	205
Public Works	6	6	6	7

	1982	1983	1984	1985
Public Health	189	217	233	244
Library	1	1	1	1
Agriculture	60	62	64	66
Commerce	2	2	2	2
Parks & Recreation	-0-	200	400	679
Total	967	1,234	1,480	1,795
Other Local Revenue				
Sales & Compensation	23	25	25	26
Cafeteria	1,153	1,268	1,332	1,398
Miscellaneous	681	715	737	759
Total	1,857	2,008	2,094	2,183
Revenues from U.S. Gov't.				
National School Lunch/ Breakfast Program	2,159	2,224	2,290	2,359
SAFA P.L. 81-974(B)	2,100	1,995	1,895	1,800
Other Grants-in-Aid (Match)	15,118	13,606	12,246	11,021
Total	19,377	17,825	16,431	15,180
General Fund Revenues	154,039	156,081	165,446	178,682
Estimated Appropriations:				
Operations	152,380	158,475	163,229	168,126
Capital Improvement Projects	5,000	1,210	1,270	1,333
Continuing	2,559	615	646	678
General Fund Appropriations	$159,939	$160,300	$165,145	$170,137

STATEMENT OF THOMAS V. C. TANAKA

I am truly honored to appear before you today. I would like to begin my comments by acknowledging the Territory of Guam's appreciation for the support you have given our community. Through your interest, the infrastructure systems of our island have steadily improved over the years. Though much is yet to be done, I believe you should be proud of the federal government's accomplishments in improving the quality of life on Guam. I personally thank you for your support of the efforts of Congressman Antonio B. Won Pat. I am optimistic that the fine working relationship that exists between Congressman Won Pat and the member of this subcommittee will continue to result in a fair and balanced appraisal of our development needs.

My testimony this afternoon will supplement the testimony presented on behalf of Governor Paul M. Calvo. Rather than repreat the Governor's discussion on the FY 1982 Department of Interior budget request, suffice it to say that the Sixteenth Guam Legislature concurs with the Governor. We agree with the Governor that the matching requirement on capital improvement funds be waived. Though we would have preferred a greater financial commitment in support of our infrastructure development program, we recognize that the economic difficulties confronting the Nation may preclude a more significant investment at this time. I echo the Governor and Congressman Won Pat's caution, however, that the application of the federal government's expenditure and tax reduction programs should be tempered as they are applied to the off-shore territories. An action which might be healthy for the Nation's economy might have immediate and drastic economic consequences in our community.

I would now like to draw your attention to several of the points raised through the Governor's testimony. I hope the information I provide will assist the members of this subcommittee in its review of the budget request as well as offer some insight into several issues important to Guam.

Public Law 96-418

Public Law 96-418 transferred over 927 acres to the Territory of Guam in the Apra Harbor area. For the most part, the property surrounds our Commercial Port. The language of the original bill was amended on the floor of Congress to require that the federal government be the beneficiary of the revenues of the sale or lease of the property by the Government of Guam. All transactions are required to be at market value. Congressman Won Pat is now working with appropriate Congressmen in exploring possible language to be used in an amendment to the law permitting Guam the flexibility to entice off-island investment through lease incentives.

Preliminary to the passage of P.L. 96-418, the Government of Guam entered into a 20 year lease-hold agreement with the Department of the Navy for 11 acres of land adjacent to the Port. The property is to be used to expand the Port's container yard. The 11 acre parcel is part of the 927 acres transferred to the Government of Guam. Our problem is that certain financing for the container yard expansion is dependent on the Government of Guam owning the 11 acres in fee. The solution to this problem would be for the Department of Defense to permit the direct transfer of the 11 acres to the Government of Guam. The Department of the Navy has agreed to the proposed use of the property. The container yard expansion serves the best ineterest of both the military and civilian communities.

I have written Secretary of Defense Weinberger and requested that he direct the transfer of the 11 acres. In doing so, he would free the 11 acre parcel of the cumbersome planning and surveying requirements outlined in P.L. 96-418. I believe the Department of the Navy would not object to this proposal. Any action you could take to support this initiative would be of assistance to Guam.

Ammunition Wharf Relocation

I understand that the Department of Defense FY 1983 budget request includes an appropriation for the construction of an ammunition wharf to be located across Apra Harbor away from the Territory's Commercial Port. As you know, the expansion of our Port has been strangled by the current location of the ammunition wharf. The interests of the United States and Guam will be well served by the relocation of the wharf. Again, your support of our efforts to realize the development potential of our Port will be appreciated.

Aircraft Carrier Homeporting

As the Nation begins to strengthen its military posture throughout the world, I believe Guam's strategic value will become increasingly more apparent. The Territory's elected leadership will continue to actively lobby for the homeporting of additional ships on Guam.

Exemption from Sections 111 and 123 of the Clean Air Act

As you know, Sections 111 and 123 of the Clean Air Act do not allow intermittent control strategies to meet air standards. As a result, the federal EPA continues in its position that the Government of Guam is to either burn low-sulfer fuel or invest over $20 million in a scrubber system. Given the fact that our power plants are located on the western shore of Guam and the stack emmissions are blown out to sea by prevailing easterly tradewinds 90% of the time, this requirement is creating undue hardship to our island. I stress the fact that Guam is meeting EPA's air standards through the intermittent control strategy. Simply because of the inflexibility of the Clean Air Act and its interpretation by federal EPA staff, Guam is being asked to abandon a locally acceptable strategy, at a significant cost, and in doing so create environmental and economic impacts far more severe than the air impacts EPA would have us reduce. Any assistance you could provide to us on this issue will greatly benefit the people of Guam.

Health Care Needs

I request that you consider including in this year budget an appropriation for $10 million to meet the health care needs of our community. The money will be used to improve the facilities of our hospital, purchase new and necessary equipment, and address dispensary and health clinic needs.

Implementation of the Deficit Elimination Plan (U.S. Public Law 96-597)

With the passage of P.L. 96-597 the Government of Guam followed the direction of Congress in preparing a deficit reduction plan. The Governor's representative is prepared to discuss the plan with you. The Guam Legislature is committed to the implementation of the plan. We request that Congress follow through with an appropriation as is identified in P.L. 96-597.

Tax Cut Impact

We recognize that Congress is considering legislation which will result in cross-the-board tax cut. As you know, Guam's tax system is mirrored to the Internal Revenue Code. A federally mandated tax reduction immediately reduced revenues into the Government of Guam's general fund. Given the fact that the fund is now operating with an $80 million deficit and the costs of our government's operations continue to soar, a tax cut as proposed by the President would place an additional burden on our Territory. At the time tax reduction legislation is being presented, I am asking that Congress consider an authorization to reimburse Guam's general fund for revenues lost as a result of the reduction.

The War in the Pacific National Historic Park

Since Congress established the War in the Pacific Park, significant progress has been made in improving certain properties within the boundaries of the park. However, development requires that money be made available to purchase the privately-owned property within the Park.

I understand that the Secretary of Interior plans to limit expenditures for the acquisition of land for park development. I am requesting that Congress appropriate funds in the FY 1982 budget for acquisition of land in the War in the Pacific Park. Following the appropriation, I do hope you will use your influence to insure that the funds are actually spent.

Technical Assistance

The Office of Territorial and International Affairs has requested technical assistance support in the FY 1982 budget request. I am assuming that these funds would be distributed towards technical assistance projects throughout the territories.

I am suggesting that the amount of money may be inadequate for the task. Guam requires technical assistance in determining its true economic development potential. The federal government, through the appropriate departments and agneices, could assist in a full examination of the agricultural production capability of our island. The federal government could assist in determining the agricultural produce export potential for Guam in the primary markets of Japan, Hong Kong, and Singapore.

If Guam is to be successful at attracting off-island business to locate offices on our island, we must know specifically the incentives other locations in the Western Pacific are offering. We then can offer similar incentives. A study is necessary to determine the benefits to Guam of maintaining its duty-free status. The federal government could help with this study.

Finally, you may wish to reconsider funding a commission to study the impact of the application of certain federal laws and policies to Guam. For years, the Territory's representatives have asked Washington, D.C. to review certain immigration and maritime laws and Civil Aeronautics Board, U.S. Customs, and Department of Labor regulations.

In summary, I believe the federal government could participate more actively in the economic development process on Guam by providing technical assistance in evaluating our island's development potential and by reconsidering the application of certain federal laws and policies to our island.

Thank you, Mr. Chairman.

STATEMENT OF ALBERTO C. LAMORENA, III

Mister Chairman, Members of the Subcommittee: I appreciate being given this opportunity to present testimony on the Department of Interior's appropriation request for the territory of Guam-for FY 1982. Although some of my comments are in direct response to the appropriation request prepared by the Department of Interior, my testimony should be viewed from a broader perspective, which shall be readily evident from my testimony to follow.

The contributions of the federal government to Guam in its development stages and in recovery from the ravages of war and natural disasters have been significant. The federal government, particularly the Congress, has been a generous benefactor and has responded to our needs at critical times.

FY 1982 REQUEST

The Department of the Interior is asking $10 million for capital improvement and assistance projects for Guam in FY 1982. The amount requested by the Interior before the Committee is for vital projects, vital in our development and in providing for the general welfare of the residents of the territory. There should be no question as to whether the Interior has the full support of the Guam Legislature in requesting funds for the projects identified. That these projects are vital are evidenced by their inclusion in the Department of Interior's FY 1982 budget, in the face of demands for cuts in spending. What remains unsaid, however, is that the funds by which the request was reduced were equally vital. If the Congress approves Interior's request, then it shall mean the territory must change the scope of the projects or finance the reduced or eliminated portion. As the Chairman of the Ways and Means Committee, I am prepared to find the optimal solution as it sees these projects as vital to the people's best interests and the territory's development.

REAGAN'S ECONOMIC RECOVERY PLAN

I am fully cognizant that Guam's original request to the Interior was reduced in response by President Reagan's Economic Recovery Plan. I am in agreement with the basic tenets of that plan. I am of the pursuasion that government is too large and that the people's welfare become subservient to the preservation of government institutions and programs. I share in the belief that inflation is caused by the spending of government. I support a program of spending restraints and a reduction of individual and corporate taxes. The public's criticism of the federal burden is merely an extension of the backlash towards state and local government revenues and spending, and the need to create incentives for expansion of private sector investment and employment.

We on Guam are not lacking in our own efforts in this direction. The Guam

Legislature in 1980 commissioned a tax study by Dr. Arthur Laffer of the University of Southern California. The study was commissioned for the purpose of reviewing, assessing and making recommendations to change the tax system on Guam. It is our purpose to eliminate regressive taxes and create a tax system which encourages investment.

The Committee which I chair has adopted a fiscal policy which will restore the General Fund to a surplus state over a five-year period. It has not been easy to develop this policy because of deep uncertainty over the island's economy and many factors external to our control, the most important of which is shifts in federal policies.

I personally have introduced sunset legislation to provide for a systematic review of agencies within the territorial government. Programs are scheduled for termination at selected dates when they have not visibly demonstrated their contribution to the general welfare or protection of our citizens, or development of the territory.

Legislation has been introduced to provide for legislative appropriation of federal funds. While the Congress has enacted laws in the interest of national goals, Guam's Legislature must be allowed a more significant role in the grants process to determine consistency with our goals, and to understand our commitment to the programs in future years.

GUAM'S IMMEDIATE LOSSES FROM THE RECOVERY PLAN

There is no question that Guam will be adversely affected by the President's recovery plan. The proposed changes to the Internal Revenue Code will provide a 30% cut in individual taxes and a similar decrease in corporate taxes (through credits or accelerated depreciation allowances) over the next three years. Guam, however, derives fully 63% of all its taxes and other receipts from the territorial income tax, which is a mirror image of the federal income tax. This percentage includes the amounts the territory receives from the withholdings of military personnel stationed on Guam. Another measure introduced in the 97th Congress which would reduce on an even larger scale the income tax imposed upon military personnel would severely compound the problem.

The loss from federal program cutbacks under the recovery plan will also be significant. Original estimates indicated that in excess of 700 people employed in federal programs might be affected. This includes the loss of subsidized employment for almost 200 persons. Individual direct assistance monies will also be lost as well as money for development and planning.

I am uncertain as to the continued presence of several federal agencies already on the island and whether they will continue activity on Guam. Other agencies whose presence could benefit the territory, including agriculture and customs agents, are faced with the budget cuts. This almost assures that Guam cannot hope for an increased federal presence which could help in our development.

These losses will be severe to the territory in terms of employment, in terms of infrastructure capital and planning funds, and loss of service. Our private sector, which is almost entirely services-oriented, can also be expected to be adversely impacted. These are losses arising from President Reagan's recovery plan. I fully support the President's plan in the best interests of the nation. Short-term losses in revenue and income will be offset by private capital investment. This is the intended plan in the continental United States. There is no reason, however, to believe that this will be the case for Guam.

OBSTACLES TO GUAM'S RECOVERY

There are several reasons which make me believe that Guam will not recover from the tax cuts or from the reduction in federal spending as it is intended to for the continental United States. These reasons are outlined below:

1. Variance in Economic Factors

The territory is facing a unique situation regarding employment. Within the government sector, employment represents 50% of all persons gainfully employed. The territorial and federal government share equally in this percentage. There is no industrial base to speak of within the territory. Businesses which would benefit from the President's proposals are in the general service category and do not represent the manufacture of products. Unemployment in the territories is already high. The most recent figures for late 1980 recorded unemployment 9.8%, the highest level in the territory in four years. Industries intending in the future to locate on Guam will certainly be not able to take advantage of the tax benefits before the general public begins to feel the strains of cutbacks in spending.

2. Government of Guam Deficit

The Government of Guam currently has a deficit of $80 million. It currently spends 99% of its revenue sources for operations. Of this, personnel costs stand at 75%. There is no reserve with which the Government of Guam can respond with quickly in the face of cutbacks in federal spending. The sudden shift in federal policies allowed absolutely no leadtime for establishing new policy directions or to prepare for the gradual phaseout of government services. There are no ready substitutes for these services as they cannot be provided for by the private sector nor is there a second layer of government in the territory to rely upon.

3. Private Sector Complications

There is not any industrial base to speak of in the territory. Tourism remains crucial in Guam's economy, as important as military activity. Garment and watch manufacturers which were established in the late sixties and early seventies are nonexistent today. Efforts to establish Guam as an agricultural center, a banking center, a regional office center, and a transshipment center are in its formative stages. A full effort to continue pursuing these objectives is highly desirable, but its major impetus must be the federal and territorial governments working in perfect harmony, open and frank dialogue, and commitment of funds.

The private sector is not in a position to assume this responsibility nor is it in any position to remove government's legal and administrative barriers.

4. Legal and Administrative Constraints

As stated, there is no industrial base large enough to benefit from the President's recovery plan. There are many impediments to new venture capital being introduced in the territory. Corporate costs are high. The cost of land especially is debilitating. It is partially an artificial cost since the federal government currently retains ownership of 1/3 of the land area and the Government of Guam still another 1/3. Much of the territorial government land is in use or unsuitable for use. This is not the case with federal lands. Our labor costs are high, particularly in the construction area. Again, these costs are artificial since they have been increased by administrative rulings by the U.S. Department of Labor. Energy Costs are prohibitive and rising with no end in sight. A relatively small factor in other jurisdictions, this cost alone may be the deciding factor of a business in locating within the territory. There is also a great deal of uncertainty in the private sector that the changes in federal policy, while good in the long-term and serving the best interest of the nation, are not in the best interest of Guam or in line with corporate goals. Other federal regulations are excessive. Shipping costs are extremely high. This is in part from fuel, but also because federal law which requires that commercial cargo between American ports (i.e. Guam and San Francisco) are required to be American bottom vessels. Environmental regulations forcing compliance are costly and ineffectual. The Governor's and Speaker's testimonies regarding the Guam Power Authority's problems is most illustrative of this fact. Administrative rulings are much too ambiguous and made too distant from Guam to rectify easily. The Congress has enacted special provisions of law which require that 50% of a product's value be added on Guam to be eligible for importation duty free into the United States. Several companies on Guam in the 1970's felt confident that they qualified only to have adverse administrative rulings made subsequent to the manufacture and after arrival at east coast ports. The time delays and uncertainty of future rulings forced all of these firms out of business. Where there was a modest amount of employment generated from this sector, there is none this day.

Certificate of alien laborers has been assumed by the federal government and the federal government has imposed a series of adverse wage rates for these laborers. This latter action has virtually stalled construction in the territory and priced potential homeowners out of the market. In the continental United States, the damage that high interest rates have done to homeowners has been great. As elected representatives, you are keenly aware of this. With labor costs in the territory having increased tremendously and the added problems of high interest rates, there is no wonder that homeowners in the territory face this dilemma.

The Congress enacted P.L. 95-348 which would grant the territorial government an annual advance on federal withholdings returned to it quarterly. The only requirement was that the territorial government change its fiscal year from a July start to an October start. This was accomplished in 1979. While the Congress was extremely generous in granting this advance, the change in fiscal years has made the budget process ever more difficult. More than 50% of our budget authority is within the programs of education and higher education. When the fiscal year is applied to a July start, agencies in these programs were planning nine months in advance of their academic year. Now, however, the planning is taken up 21 months prior to the academic year. This requirement is unreasonable and it should be withdrawn.

The President recently announced the creation of a special task force to study the impact of federal spending cuts in Puerto Rico. This task force excludes from the study the impact on the Virgin Islands, Guam, and American Samoa. Yet, these other off-shore territories face similar, if not equal hardships.

THE CONGRESSIONAL POLICY

The congress in recent years, has been more than generous to the territory in understanding the delicate fabric of our economy, the impediments to our growth, and the obstacles surrounding our political maturity. The congressional policy, as magnanimous as it has been, has not been fully carried out. The congressional intent to reduce the local matching requirements for operating and planning grants is now replaced with a policy requiring the territories to match capital grants. Agencies which should have waived the local matching requirement have not done so.

The Congress intended to reduce the interest portions of the Rehabilitation Loan for FY 1981. The Government of Guam has received no increase in Section 30 receipts on the basis of this action. We are hoping for further adjustments for FY 1982, when repayment of the principal of the Rehabilitation Loan is forgiven. We are anxious that the congressional intent regarding technical assistance to the territory, exploration of alternate energy resources, and the congressional intent to extend agricultural programs for developing the agricultural sector on Guam are responded to adequately. These are essential to our development and Congress has been wise in establishing such policy for the territory. We are hopeful that the Congress will be adamant in seeing congressional intent regarding development of the territory carried out.

CONCLUSION

I deeply appreciate this opportunity to present this testimony before the sub-committee. I hope I have outlined the problems facing us in the territory, what I feel are impediments to our development, the positive contributions of the Congress, and which we hope will be carried out. We in the territory have a great desire to serve as the American model in the Pacific. We intend to become a prosperous and self-sufficient American community in the Pacific. We intend to accomplish this within a suitable framework of government and with close relations with the United States. I feel that Asia and the Third World are looking to the United States in how it handles its territories politically and economically. I hope that my impression of the Congress' role and of Guam's potential meets with yours. I am very hopeful in that respect. In closing, allow me to say that I am deeply honored and appreciative to have been given the chance to testify before this August body.

COMMONWEALTH OF THE NORTHERN MARIANAS

STATEMENT OF HON. EDWARD DLG. PANGELINAN, REPRESENTATIVE TO THE UNITED STATES FROM THE COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

ACCOMPANIED BY:
JAMES WEATHERSBY, BUDGET OFFICER
PETER SASAMOTO, DIRECTOR OF PUBLIC WORKS

BUDGET REQUEST

Senator JOHNSTON. Next we have the Hon. Edward Pangelinan from the Northern Marianas. Eddy, we're very glad to have you back.

Mr. PANGELINAN. Thank you very much, Mr. Chairman. If I may, I'd like to invite two of my other colleagues from the Northern Marianas—I'd like to invite Jim Weathersby, the Budget Officer, and Pete Sasamoto, the Director of Public Works.

Mr. Chairman, Governor Camacho extends his regrets for his unavailability to appear before your committee. We had a recent crisis in the Northern Marianas which required his return to the island 2 weeks ago.

Senator JOHNSTON. Tell him we're very sorry he can't be here, but tell him that I said he was very well represented.

Mr. PANGELINAN. Thank you very much. Also the Governor had earlier submitted a written testimony as well as Senator Joseph Inos' from the Northern Marianas Senate. Those are before your Committee.

Senator JOHNSTON. Of course those statements along with your full statement will be put into the record.

Mr. PANGELINAN. Thank you, Mr. Chairman. I extend warm greetings from Governor Camacho and the people of the Northern Marianas who are here to testify on our budget request for fiscal 1982 for the Commonwealth. The Government of the Northern Marianas is grateful to the U.S. Government for its continued financial support under the covenant in providing a fiscal 1982 budget, the sum of $26,516,000, consisting of $15,186,000 earmarked for government operation, $9,076,000 for capital improvement projects, and $3,314,000 for economic development loan funds.

Local revenues derived from local taxes, fees, and reimbursement is $14,947,000. This is approximately 49 percent of the funding requirement for general government operation and represents an increase of $4,368,000 over fiscal year 1981 and $6,321,000 over the first year of the new Commonwealth government. The increase is attributable to the improvement in collection of local taxes and fees and to proposed revenue initiatives submitted to the legislature by the administration and the establishment of the Utility Rate Commission.

The proposed fiscal year 1982 budget is a balanced one and includes funding for the three branches of government, including the Office of the Representative to the United States. The budgetary allocations base of 1980 obligation experience, taking into consideration the accounting effect of the annual increase in employees, the process of trimming the budgetary allocation of the executive branch to achieve a balanced budget resulted in the elimination of a significant number of vacant positions among the departments and offices in fiscal year 1981.

The Commonwealth budget recognizes the need for financial restraint from the impact of high fuel costs for power generation in the Commonwealth. The cost of providing this vital service has more than tripled in the last 4 years and would account for over 25 percent of the resources available to operation.

Our fuel costs, Mr. Chairman, have risen at a rate two and a half times higher than the implicit price factor. The Commonwealth will find it difficult, if not impossible, to continue providing uninterrupted electrical services without financial assistance. Most explict requirements, we are asking for a supplemental appropriation for fuel and cost relief, funding for the new hospital, the American Memorial Park, and others for roads, water systems, harbor facility construction and reconstruction, and finally for power generation and distribution.

Our requests for 1982 are formulated within the goals and objectives of the social and economic development plan of the Commonwealth. The supplemental request involves capital outlays which far exceed the ability of the Northern Marianas to finance under current funds but are vital to meeting our commitment to economic self-sufficiency. We have recognized the need for greater economies in government and the need to raise local revenues to maintain and improve public services.

To this end, we have initiated specific cost-cutting measures to whittle down the cost of government. In addition, we have created a Tax Advisory Commission and a Utility Rate Commission to indentify and implement new revenue measures. We have utilized our budgetary resources on programs that will produce positive social and economic contributions to our people.

In the past 3 years of Commonwealth government, which was inaugurated in January 1978, we have achieved significant increases in our gross island product, which is equivalent to the GNP, adding up to $135 million at the end of fiscal 1980. This is a jump of 15 percent from fiscal year 1977.

The number of persons employed in the Northern Marianas grew during this period from 7,000 to 8,095, while a loss of 727 jobs due to gradual reduction of the work force at the trust territory headquarters on Saipan was absorbed. The Commonwealth work force grew by no fewer than 1,015 new jobs during the past 3 years, representing an average increase of 5 percent. These additional jobs are attributable to the Commonwealth's expanding economic activities. The new jobs have helped to raise local revenues from $3.9 million in fiscal year 1977 to $9.7 million in 1980, and we anticipate an additional increase of $14 million by 1982, which is an increase of 149 percent in the past few years.

We are committed to making the Commonwealth economically self-sufficient. We have directed the economic development loan fund to accelerate the granting of loans for commercial fisheries, agricultural and light industry undertakings, and to provide needed technical assistance in management, marketing, and product development. Unfortunately, our ability to accelerate the pace of economic development in these sectors has been limited by the antiquated and inefficient harbors, roads, water and power distribution systems, and other facilities.

The budget we have brought with us and have presented to you was designed to implement the aims I have cited and to build moral and fiscal strength into America's westernmost frontier. We present it to you for your serious consideration and possible addition and improvement. We believe this budget's importance is of long term and worldwide ramification and in details and even in scope transcends the capabilities and vision of any one group.

We ask you to join with us in true and free discussion of the future of our people and how their lives and their political, social, and economic activities may be integrated to the enduring benefit of all. Reducing this to budgetary terms, however, is an awesome responsibility, and we are eager to share the responsibility with you seriously and fruitfully.

We are ready for questions, Mr. Chairman.

[The statements follow:]

STATEMENT OF CARLOS S. CAMACHO, GOVERNOR, COMMONWEALTH OF THE NORTHERN MARIANAS

I am Dr. Carlos S. Camacho, Governor of the Commonwealth of the Northern Mariana Islands. On behalf of the Government and people of the Northern Marianas I extend to you, Mr. Chairman, and members of this Committee our warmest greetings and appreciation for the honor and privilege of appearing before this august body to testify on the proposed FY 1982 budget.

Before proceeding further I wish to introduce the members of the Northern Marianas delegation who will assist me during the testimony and will answer any questions you or any member of the Committee may have. They are Mr. Manuel A. Sablan, Planning and Budget Affairs Officer, Mr. Richard Lassman, Attorney General, Mr. George Chan, Chief Physical Planner, Mr. Pedro Sasamoto, Director of Public Works, and Mr. Jim Weathersbee, Budget Officer. Also present are Senator Joseph S. Inos, and Mr. Edward DLG. Pangelinan, our Washington Representative to the United States.

The Government of the Northern Mariana Islands is grateful to the United States Government for its continued financial support under the Covenant in providing in the Fiscal Year 1982 budget a sum of $26,516,000 in Covenant funds, consisting of $15,626,000 earmarked for Government Operations, $9,076,000 for Capital Improvements, and $3,314,000 for Economic Development Loan Funds. Local revenues, derived from local taxes, fees and reimbursements, is $14,947,000. This is approximately 49% of the funding requirements for general government operations, and represents an increase of $4,368,000 over FY 1981, and $6,327,100 over FY 1978, the first year of the new government. The increase is attributable to improvement in collection of local taxes and fees, and to proposed revenue initiatives submitted to the Legislature by the Administration and the establishment of a Utility Rate Commission.

The proposed FY 82 budget for the Northern Marianas is a balanced one, and includes funding for the operations of the three branches of government, including the Office of the Representative to the United States. The budgetary allocations are based on FY 80 obligational experience, taking into account the effects of annual wage increases for employees. The process of trimming the budgetary allocations of the executive branch to achieve a balanced budget resulted in elimination of a significant number of vacant positions among departments and offices in Fiscal Year 1981.

The proposed FY 1982 Northern Mariana Islands budget was formulated within the framework of the goals and objectives of the Socio-Economic Development Plan. The plan has been extended to FY 1987 and contains an assessment of the progress made during the first three years of the new Government (FY 1978-1980). It also provides an historical overview of the efforts made to implement the total CIP program. The formulation of the FY 1982 CIP budget places greater emphasis on initiating projects that would equip the Commonwealth with the necessary economic and physical infrastructure to advance the social and economic posture of the Government. The Plan recommended specific CIP projects, some of which require large capital outlays that exceed the ability of the Northern Marianas to finance. These projects are vital for upgrading the basic infrastructure.

The proposed FY 1982 Northern Mariana Islands Budget recognizes the need for greater economy in government and the need to raise additional local revenues to maintain and improve public services. Specific cost-cutting measures have been strengthened to hold down the cost of government operations, including imposing a manpower ceiling on government employment, strengthening the procedures and enforcement of the government procurement and property accountability system, and reviewing the current policies on government travel, energy conservation, medical referral, medical procurement and supply, off-island recruitment, benefits and overtime.

The proposed FY 1982 Northern Mariana Islands budget assumes that the Legislature will enact revenue legislation to help defray the cost of petroleum products for power generation, and the cost of the medical referral program. A Utility Rate Commission was recently established by Executive Order to evaluate the utility rate structure and to implement new rates. In FY 1981 the government adopted specific measures to reduce power consumption. All departments and agencies have been audited to determine a reasonable consumption level. Activities that exceed the established consumption level will bear the excess in their operational budget.

With the Covenant funds and local revenues, we have completed many improvement projects and have demonstrated economic progress within the past three years in a number of areas, especially those relating to tourism, presently our only major industry. However, in order to accelerate infrastructure development of essential health care, reliable power supply and distribution, adequate harbor facilities, safe highways and roads, locally available renewable energy sources, adequate water supply, telecommunications, and training facilities, we must seek special appropriations form the U.S. Congress. We also seek additional appropriations to offset the ever rising costs of petroleum products for our power generation system which is totally dependent on imported fuels. In the current year petroleum costs will exceed $7,000,000 and in FY 82 it is estimated to be over $8,000,000. This latter figure represents 30% of the total operational costs.

Tourism remains the cornerstone of our economy. Saipan, Rota and Tinian have modern air terminals and runways. The Saipan runway can now accomodate jumbo jets. There are 232 hotel rooms under construction which will increase the total number of hotel rooms to 905 by December of this year. All this will enhance our tourist industry, but places severe strains on our already inadequate power, water, waste treatment, highways and communications facilities. We must improve these facilities in order to keep pace with the growth in this vital industry.

The Commonwealth is also committed to improving agriculture and fishery activities. But this also is dependent upon the timely improvement of related facilities. Because of our proximity to major markets in Asia and the Western Pacific, our developing agriculture and fishing industry has the potential to become as important as our tourist industry. These industries will provide employment opportunities to a significant number of residents in the years to come.

The growing business sector is engaged in construction, transportation, merchandizing, and service activities. Some manufacturing has started, and an increasing number of potential investors have expressed interest in the Commonwealth, but the inadequate infrastructure has discouraged many of them.

While we recognize that the FY 82 budget is austere, I feel we are justified in continuing to make additional requests, especially since they have been under consideration since the creation of the Commonwealth. It is important that they be implemented soon, for together with the other Micronesian entities we are far behind the other U.S. insular areas in economic development. We urgently need to develop the basic infrastructure to support a self-sustaining economy that will bring us to a level worthy of a new and respected member of the American political family.

The Covenant, which defines the unique relationship and mutual benefits between the Commonwealth and the United States, ensures that financial support shall be provided to develop the essential infrastructure projects that are needed to achieve a progressively higher standard of living for its people as part of the American economic community, and to develop the economic resources needed to meet the financial responsibilities of local self-government. We have now passed the half-way mark in the first seven year period of planned development, and we still have a very long way to go. We are very concerned that the budgetary reductions of the new Administration will have a profoundly adverse impact on the economic and social well-being of our emerging Commonwealth and people.

We have limited our additional requests to those that we presented in previous years to this Committee and the Authorization Committee. We are again asking for these projects because they are long overdue and should have been implemented during the 35 years of the United States Trusteeship administration of the islands. During this period the United States was repeatedly criticized for its failure to provide the needed infrastructure to support a self-sustaining economy in the Trust Territory of the Pacific Islands. As we move toward full status as a Commonwealth, we urge that these deficiencies be corrected without any further delay.

We would now like to highlight the infrastructure development program the Commonwealth must implement within the next few years:

HOSPITAL FACILITY

The Saipan Hospital has been the subject of many studies and reports. All are very critical of the poor condition of the existing facility and stress the need for a replacement. The new hospital is a matter of the highest priority both inside and outside the Commonwealth. As we have reported to this Committee earlier, we want to reiterate that:

> "the Hospital ... is in a state of deterioration. Built of materials unsuited to the local climate, it was poorly designed, resembling everything but a multi-service facility. The buildings are uncomfortable and inefficient for both hospital personnel and patients. Although there have been numerous improvements made on Dr. Torres Hospital, the facility still does not meet minimum U.S. standards for Medicaid. Since December of 1976, three official inspections, sponsored by the Federal Government, have been made of Dr. Torres Hospital. All three reports recommended that the present facility be replaced by a new inpatient structure, with an outpatient unit providing care for the increasing number of primary care patients."

We have expended much effort to study and plan for the implementation of this project. We fully support the Department of the Interior's request for an appropriation of $1.125 million to initiate the architectural and engineering studies of the new facilities (see Attachment #1 - New Saipan Hospital and Public Health Center's Functional and Space Program Summary).

POWER

We are thankful to this Committee for the appropriation of $5,000,000 to help defray the cost of a new and modern 21 Megawatt power plant in Saipan. Unfortunately, the existing distribution systems are very old and must be replaced at a cost of $5,000,000 (see Attachment #2). Moreover, a new generator of 7 Megawatts is now required to meet the increasing demand of the consumers in Saipan at an estimated cost of approximately $4,000,000 (see Attachment #2.1)

ELECTRICAL GENERATION

Petroleum costs for electrical power generation are increasing at a rate well beyond what can be funded with our limited resources. The actual cost in Fiscal Year 1980 increased 112% over the 1977 cost. These increases caused significant funding problems in FY 1980. Our estimate for Fiscal Years 1981 and 1982 indicate that petroleum costs will be substantially greater than FY 1980 and will account for 30% of our operational budget in those years.

The net effect of petroleum product price increases over inflation in the three year period for which actual figures are available is $1,725,100. Estimates for Fiscal Years 1981 and 1982 are $3,925,100 and $4,365,900, respectively. The total impact of these increases is $10,016,100. This amount is requested as a supplemental appropriation under the authorization provided the Department of the Interior for the Trust Territory of the Pacific Islands for this purpose (see Attachment #2.2).

HARBOR FACILITIES

As you are aware from previous testimonies to this Committee, the Saipan harbor facility remains sub-standard and dangerous. We would like to again request the support of this Committee for the appropriation of $15,000,000 to upgrade the harbor facility in Saipan. Your Committee mandated the Secretary of the Interior to conduct a needs assessment study on harbor facilities in the Commonwealth, and requested that such study be completed in FY 81. The study is now being formulated by the U.S. Army Corps of Engineers and will be presented to the Secretary of the Interior this month. We are pleased to report that we have worked cooperatively with the Corps of Engineers on this assignment and have integrated our current effort in developing preliminary studies and architectural/engineering plans for this project. We have committed $291,400 from Covenant funds for this purpose.

HIGHWAYS

Highway improvement has a vital role to play in the development of the Commonwealth. Besides the safety factor, a well-integrated and improved highway system will be required to keep pace with the evolving economy. Of the 164 miles of road on Saipan, Rota and Tinian needing reconstruction at an estimated cost of $90,000,000 (Physical Development Master Plan, 1978), 87 miles are eligible for Federal grants under the Federal Aid Highway System at an estimated cost of $48,000,000. The current level of funding ($532,500 annually) provided the Commonwealth under the annual appropriations to the U.S. Department of Transportation for highway construction to the territories is totally inadequate. At this funding rate it will take over 90 years to complete this program. To make matters worse, we have learned that the U.S. Department of Transportation will lose its authority to provide this funding supoort to the Commonwealth by the end of FY 81 for the lack of continuing authorization for appropriation from the U.S. Congress for this program. We respectfully seek the continuation of funding for this program. Further, we urge that the funding level to the Commonwealth be increased to $3,000,000 annually (see Attachment #4).

ENERGY PLAN

Our complete dependence on fossil fuel for our energy needs is a matter of serious concern. We are totally dependent on supplies from foreign sources -- a situation which is aggravated by the high cost of shipping and distribution. We regard the development of local renewable energy sources, such as solar, wind, biomass, biogas, geothermal and ocean thermal energy conversion, as a matter of extreme urgency. These resources have not received the attention they deserve in the National Energy Policy because they are regarded as secondary to nuclear, shale oil, and coal liquefaction or gasification which are important to the mainland states but absolutely useless to the insular areas. The development of our local energy sources is of vital and immediate importance to the Commonwealth. We are looking forward to the DOI/DOE Task Force established by P.L. 96-597 to help the insular areas develop an appropriate Energy Plan aiming at self sufficiency in the near future. (see Attachment #5).

WATER

Water has always been in short supply. Wells have been depleted or have deteriorated from over-pumping. The distribution system, much of which was built with war-time materials, leaks very badly. The Commonwealth has committed a substantial portion of its limited Covenant CIP funds for the improvement of the water system, but the problems facing us are beyond the capability of our financial resources. An exploration program was implemented in FY 80 with funding from the United States Water Resources Council, but the funds for FY 82 were drastically reduced and this work may be phased out soon. It is important that we continue this work, as it will allow us to develop this critical and limited resource through adequate planning and effective management, and avoid the present water supply crisis of forced water hours and general degradation in water quality.

We cannot afford to continue the current practice of "crisis management" of our water resources. We must strengthen our planning mechanism for the effective management and use of this valuable natural resource. The cost for upgrading the water system, as identified in the Commonwealth Physical Development Master Plan, would require approximately $10,000,000 (see Attachment #6). We seek your favorable consideration for an appropriation for this amount.

AMERICAN MEMORIAL PARK

We are again seeking your support to appropriate the sum of $3 million as authorized by Public Law 96-348 for the development of the American Memorial Park on Saipan. The Commonwealth and the U.S. are committed to setting aside an area of 133 acres of prime land on Saipan for public use for a memorial to the American marines and people who were killed or wounded in the Marianas campaign during World War II. We have expended considerable effort and money in site preparation for this memorial. We hope that this committee will give due consideration to honor the memorial of our brave citizens who gave their lives for the security of our nation.

LOCAL MATCHING FUNDS

One last matter of grave concern to the Commonwealth, which we believe is shared by the other territories, is the new initiative of this Administration to require matching of 25% from local resources on each capital improvement project funded by the Federal Government. The Commonwealth does not have the financial resources to meet this requirement. The cash flow required to initiate federally funded CIP projects by the Commonwealth would place an inordinate financial burden on the Commonwealth government and people. We therefore seek your understanding and consideration to postpone or waive this requirement until such time that the Commonwealth develops its basic infrastructure that would support a self-sustaining economy.

GENERAL REMARKS

On a broader perspective, I wish to make a brief statement regarding the Commonwealth of the Northern Mariana Islands and the contributions its people can (and wish) to make to their parent government's current efforts to strenghten its world posture, at least its posture in the Western Pacific area. I call your attention to the unique geography that our island present: a thin line, more than 400 miles long, of sixteen archipelogic islands separating the Pacific Ocean from the Philippine Sea, and which is America's true and last western frontier. Lest we forget, I remind you that these several small, once-considered-remote islands were recently 'key' to winning a great war; and I suggest that they, if properly regarded, can become the 'key' to preserving the peace and prosperity of this vast Pacific area. In all earnestness I say to you that it is in the best interests of all who live in the free world that this small, strategic, and accessible frontier area be made into a stable, viable, and fully-functioning part of the United States. I say this for the sake of those of us who live there; I say it for the sake of all the American people and their interests -- their multiple national and international interests.

Geography identifies only one factor in the contribution the Commonwealth is prepared to make to its parent government. The other factors concern human attributes. The commitment of our people to the United States and its way of life has successfully weathered the first three years of the experimental U.S.-Commonwealth relationship. The commitment of our people continues to be solid, complete, and reminiscent of the enthusiasm the American people showed their Republic in its earliest days. Ugly nationalism and xenophobia that hamper and embarass U.S. efforts in other overseas locations, have not arisen, and our people see themselves as full partners in U.S. efforts to rejuvenate its image and capabilities. Even the occassional psychologically disturbed and ranting Stateside demogogues who wander into our midst cannot upset these convictions, for we, the people of the Northern Mariana Islands, know their ilk, recognize their hypocrisy, and reject them out of hand.

Ancient principles of individual and family responsibilities to self-sufficiency (perhaps comparable to those in early U.S. pioneer days) still prevail and have not been seriously eroded by welfare-state ideology. Should change occur in these traditional attitudes, should such a catastrophe occur, it will be by default of our two governments to provide the basic ingredients for developing a self-sustaining economy as this late Twentieth Century requires.

The budget we have brought with us and have presented to you, was designed to implement the aims I have cited and to build moral and physical strength into America's Western-most frontier. We present it to you for your serious consideration and possible additions and improvements, for we believe that this budget's importance is of such long-term and world-wide ramifications that its details and even its scope transcend the capabilities and vision of any one group. We ask you to join with us in full and free discussion of the future of our people, and how their lives, their political, social and economic activities may be integrated with mainland counterparts to the enduring betterment of all. Reducing these values to budgetary terms, however, is an awesome responsibility, and we are eager to share this responsibility with you ... seriously and prayerfully.

Attachment #1

HOSPITAL FACILITY

CAPABILITY STATEMENT

AGENCY/BUREAU: Department of the Interior/Territorial and International Affairs

APPROPRIATION: Administration of Territories

ACTIVITY : Commonwealth of the Northern Mariana Islands

PROPOSED AMENDMENT : Public Law 96-205 authorizes an appropriation of $24,000,000, plus or minus such amounts which may be justified by reason of ordinary fluctuations in construction costs from October 1979 price levels, for the construction of a medical facility in the Commonwealth of the Northern Mariana Islands to provide for health care services.

CURRENT PROGRAM : Since December of 1976, there have been three official inspections of Dr. Torres Hospital sponsored by the Federal Government and six additional studies of the NMI health care system which have included an assessment of the need for a new hospital in the Northern Mariana Islands. All of these reports have recommended that the present facility be replaced by a new inpatient structure, with an outpatient unit providing services for the increasing number of primary care patients.

Since the Congressional authorization in 1980, the Commonwealth has undertaken more detailed planning of the facility. Plans as to the size, site location, expected scope of services, space requirements, cost estimates, a project timetable, staffing requirements and operating costs have all been developed by the Government of the Northern Mariana Islands. These plans are detailed in the attached Budget Justification.

In addition to these plans, the CNMI and Region IX Office of the Department of Health and Human Services have developed a "FY 1981 Action Plan for the CNMI Hospital Project". This plan outlines twenty tasks which must be completed prior to the signing of the Architecture and Engineering Contract. Lead organizations and completion dates have been set for each task. Seven of the twenty tasks have already been accomplished, and others are in the process of completion now. The Action Plan is contained in the appendix of the attached Budget Justification.

AMOUNT BUDGETED IN FY 1982 : The Commonwealth is requesting an appropriation of $1.5 million in FY 1982 for the initiation of an architectual and engineering study for the new medical facility. This is equal to the amount recommended by the Department of the Interior for inclusion in the FY 1982 budget.

FEASIBILITY : The construction of a replacement medical facility in the Northern Mariana Islands is not only feasible, but is essential to the provision of high quality health care services in the Commonwealth. Dr. Torres Hospital is in a state of deterioration. An estimated 10 percent (1979) of all CNMI resident inpatient days are spent in facilities outside of the Commonwealth. Many of these medical referrals are due to the fact that Dr. Torres Hospital is simply not adequate to meet the increasingly high building standards required by modern medical care.

The construction of a new medical facility has been in the planning stages for several years. This construction is both extremely desirable and a very high priority for the Northern Mariana Islands. The construction of a new facility is essential to the established program goals of the Northern Marianas health care system. These goals are outlined in detail in the Commonwealth Health Plan.

CAPABILITY : Consultant recommendations as to the cost of constructing a new facility have ranged from a low of $15.9 - $22.6 million to a high of $41.5 million. The Commonwealth has revised these estimated costs to reflect the construction of an 80 bed facility. Two estimates have been devised by the Commonwealth for the cost of constructing such a hospital. The lowest possible estimate is $24.2 million and a slightly higher estimate is $26.1 million. The $24.4 million authorization made in March of 1980, then, seems barely sufficient to cover the costs involved in the construction of a new facility. It is important to note that these estimates are based on the assumption that the architectual and engineering study can begin in FY 1982. If this does not hold true, the cost of the proposed facility will definitely increase due to the high rate of inflation. A more detailed budget and explanation are contained in the attached justification.

OUTLAY EFFECT: The estimatated outlay by fiscal year (in millions) is:

1982	$ 1.5
1983	$11.7
1984	$ 8.5
1985	$ 2.7
Total Outlay	$24.4

For additional information see attachment A.

Attachment # 1A

NEW HOSPITAL AND PUBLIC HEALTH CENTER
FUNCTIONAL AND SPACE PROGRAM SUMMARY
COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS

During the last four years six studies of the Commonwealth of the Northern Mariana Islands Health Care System have been undertaken. The results of these studies all agreed upon one thing and that is the Commonwealth needs a new hospital. However, these same studies have not agreed upon the size and scope of such a hospital. Estimates of the number of beds required to support our needs ranged from a conservative 60 beds to an overly generous 100 beds. We have carefully analyzed the population, its needs and our staff resources, and feel it is appropriate to construct a new facility with a capacity of 64 acute care beds and 10 long term and psychiatric beds. These beds fall well within the national guidelines of four beds per thousand population considering a 20,000 plus projected 1990 Commonwealth population.

In an era of scarce resources we have developed a program of requirements describing a flexible and efficient hospital. Working closely with Region 9 of the Department of Health and Human Services, we propose to provide a comprehensive array of primary and secondary level health care services while continuing to refer the more complicated secondary care and all tertiary care patients to off-island regional health centers through established transfer agreements. We will achieve efficiencies by building nursing units which will be flexible in terms of meeting the needs of a variable census by combining traditionally dedicated and separate nursing units. This will allow us to achieve economies of scale for nurse staffing and for all support and supply systems. We have in the past, and will continue in the new facility, to combine functions such as the surgical suite, the labor and delivery suite, and the central sterile processing functions to achieve staffing efficiencies and building system efficiencies.

A careful analysis of patient care activities of the Public Health Department and the ambulatory activities at the existing Dr. Torres Hospital have led us to propose consolidation of some clinic activities and patient records on the new hospital site, thereby again eliminating duplication, effecting staffing efficiencies and providing for a unified and complete patient record.

The new hospital is but one part of the emerging health care system we are developing in the Commonwealth. By virtue of previous funding, we are currently planning dispensaries for our citizens on Tinian and Pagan as part of our commitment to public health. In addition to these two new dispensaries, a new public health center has been programmed for Saipan. Because of its close affiliation with the new hospital, it has been included in our development of the Functional and Space Program for the new hospital.

We have worked diligently to evolve a concept for the most effective and efficient health care system for the Commonwealth. We propose to build a new 85,025 square foot (7,962.6 square meters) hospital on what is known as the Navy Hill site. The total project cost inclusive of contingencies, equipment, site development, start-up costs and fees is estimated not to exceed $24,400,000. The Navy Hill site was selected as the most appropriate site because it is central to the population and is the only land of significant size that is available.

The Navy Hill site is 72,842.8 square meters and is valued at $20.00 per square meter or $1,456,850.00. The construction cost inclusive of equipment and site development is estimated at $18,810,000. The Commonwealth must exempt this project from both the ad-valorem tax (import tax on materials and equipment) and the gross-receipt tax on the contractors. Assuming a mid-point of construction of October 1983, these taxes invested by the Commonwealth would amount to approximately $1,577,000. It is the intent of the Commonwealth to apply the value of the site and the tax exemption in the sum of $3,033,850 to the federal matching requirement.

My administration is presently investigating the potential of using the existing non-conforming Dr. Torres Hospital as a vocational-technical junior college to train the citizens of the Commonwealth for productive careers within the Commonwealth. Training programs may include health support and paraprofessional training for new hospital staffing. As part of the architectural fee structure established for the new hospital, an amount has been designated for the development of administrative manuals. These manuals will provide complete job descriptions and training requirements for all new hospital staff. With the assistance of Region 9 and independently we are intensifying our recruitment efforts for medical and nursing staff. The new hospital is a vital part of that effort.

The total fee structure estimated for this project includes architecture and engineering compensation, consultant cost, site survey, environmental impact statement, inspection and testing and project coordination. These fees are estimated at $1,860,000.

To assure the success of this project we will select a U.S.-based architect/engineering firm with relevant hospital experience. With approved Congressional funding and assistance from Region 9 of HHS, we anticipate this selection will be complete by October 1, 1981. The architect selected will also be commissioned to design the previously funded public health center to again achieve the maximum for every dollar spent. The Commonwealth will also seek a qualified construction management firm to work with the architect to provide a guaranteed maximum price (GMP) for the new hospital construction prior to the FY 1983 budget hearings. This will provide Congress with the exact dollar amount required to complete the construction of the new hospital for the Commonwealth by late 1984. The traditional design, bid, construct process is estimated to take at least 15 months additional time to complete, resulting in inflationary costs of well over $1,200,000.

It is estimated that, to reach the point at which a GMP will be available

(February 1, 1982), approximately $1,125,000 of the total $1,860,000 allocation for fees will have been expended. The approval of $1,125,000 by this Congress will allow the Commonwealth to proceed with architect selection and the development of a GMP.

The Commonwealth proposes to this Committee that the above effective funding process be approved. The original 1980 authorization bill budgeted $24,4000,000 for the development of a new hospital on Saipan. The provisions of this bill included an escalation factor tied to the National Construction Cost Index. This Index has increased at an average of .8% per month. Assuming a FY 1982 appropriation, the original authorization of $24,400,000 would have escalated to $29,084,800. As a result of our efforts to refine our early project estimates and to program an efficient health care system, we are proposing a $20,670,000 construction project cost, assuming a construction appropriation in the FY 1983 budget. Should Congress appropriate both the design and construction monies in the FY 1982 budget, further savings in the estimated amount of $500,000 would result as a function of starting construction in early 1982. A total project appropriation in the FY 1982 budget would allow the Commonwealth to build the required facilities for some $9,210,000 less than the original 1980 estimate escalated to FY 1982.

To assure the most effective use of Federal appropriations, the Commonwealth requests a FY 1982 appropriation of $1,125,000 as part of the full FY 1980 authorization of $24,400,000. This will allow for early completion of the new hospital with a projected opening in 1984. The appropriated monies beyond those required for the construction project as estimated ($20,670,000 vs. $24,400,000) would be earmarked for start-up costs such as training, recruitment, and retention of vital health care staff, stocking the new hospital with adequate drugs and supplies, and provisions for a spare parts depot and vital maintenance and engineering training. The spare parts depot and maintenance and engineering training are particularly important funding requirements as inadequate maintenance has traditionally been one of the most serious problems faced by health care institutions in Micronesia.

In the few short years of the Commonwealth's existence, much progress has been made; yet, much remains to be done. The development of new health facilities is so necessary to the Commonwealth. The new hospital is needed to attract physicians and allied health professionals to the Islands and will be a major source of skilled jobs for Commonwealth citizens. This facility will provide the exposure to professional career ladders now unavailable to our young people and help move the Commonwealth a long way towards self-reliance. The approval of our request for $1,125,000 as part of the full appropriation will allow the Commonwealth to continue our progress toward appropriate health care for all the people of the Northern Marianas.

BUDGET JUSTIFICATION

I. Introduction

It is the intent of this budget justification to describe, in detail, the history and approach used in analyzing the need for new facility development in the CNMI. This report seeks to answer many of the basic questions which may arise in the consideration of allocation of funds for the Northern Marianas.

One of the major questions is: Why is a new facility needed?

In the May 1979 Budget Justification for Appropriation, the following statements appear:

> "The Hospital ... is in a state of deterioration. Built of materials unsuited to the local climate, it was poorly designed resembling everything but a multi-service facility. The buildings are uncomfortable and inefficient for both hospital personnel and patients. Although there have been numerous improvements made to Dr. Torres Hospital, the facility still does not meet minimum U.S. standards for Medicaid."

Further this report states:

> "Since December of 1976, three official inspections, sponsored by the Federal Government, have been made of Dr. Torres Hospital." "All three reports recommended that the present facility be replaced by a new inpatient structure, with an outpatient unit providing care for the increasing number of primary care patients."

The studies referred to are:

1. ROFEC (PHS) Region IX.
2. DHEW Health Facilities Branch.
3. Medicaid Trip Report.

In addition to the reports cited in the Budget Justification for appropriation, six other studies of the CNMI health care system have been undertaken. These studies include:

1) "Medical Facilities Replacement Study" by Stone, Marraccini and Patterson (1979).

2) "Financial Analysis of the CNMI Health Care System" by Siegel and Associates, (1980).

3) "New Directions for Health Services for the Commonwealth of the Mariana Islands", by Mytinger and Associates (1980).

4) "Health Facility Analysis of the Northern Mariana Islands" by Moore-Johnson, Inc. (1980).

5) "Review of the Commonwealth of the Northern Marianas Health Care System and Facilities with Recommendations, by DHHS (1980)

6) "Hospital Team Final Report", by CNMI (1980).

As can been seen from the number of reports compiled on the CNMI proposed medical facility, this matter has become a priority both inside and outside of the Commonwealth. In order to clarify the issue of how a new medical facility became such a priority, a brief history of the events leading up to this point in time will be reviewed.

Dr. Torres Hospital buildings are now over eighteen years old. In the last few years the problems with maintaining the structure and utility systems seem to have been growing geometrically. Current deficiencies in the hospital are numerous. Not only do the roofs leak, but probable termite damage of the roof trussess create concern among staff members that the ceiling may actually fall down*. The Medicaid Trip report noted that the physical plant does not conform with the Life Safety Code. The list could go on and on. The resulting consensus has been for quite some time in the Northern Marianas that a new facility is absolutely essential for the provision of high quality health care services. Five years ago, the Northern Marianas government began to pursue activities which would result in the construction of a new facility.

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*Comments from Moore-Johnson, Inc.

Over the past 4-5 years, a number of special studies have been undertaken in an effort to either upgrade the existing system or develop an entirely new approach for the provision of inpatient care services. Of these studies, six have dealt primarily with the development of a new hospital facility. The first study was compiled by Stone, Marraccini and Patterson (SMP) a consultant firm from San Francisco. This study was completed in 1979. This analysis concluded that a 90 to 105 bed facility should be constructed. The estimated square feet requirement was 104,000,at a cost of about $23.4 million. This report was widely circulated and was used as the basis for an appropriations request from the U.S. Congress in the amount of $24.4 million.

Prior to the time the authorization was made, the CNMI was asked to provide a budget justification for the expenditure of the money. At this time, the Commonwealth Health Planning and Development Agency was in the process of developing a medical facilities plan and the cost components of the health system in general. Siegel and Associates of Orinda, California was hired to do a two phase study in the Commonwealth. The first area of study was to determine health care costs in the CNMI. This information was to be used in assessing cost for the Commonwealth Health Plan. The second area of study was to review the SMP Study and develop an updated replacement facility report. Siegel's conclusion on the facility aspects was that a 92 bed facility could be built but the cost would be approximately $37.4 million. The cost figure was higher than the SMP recommendation and the congressional appropriation, and was the cause of some concern within the Commonwealth that the issue of hospital construction be examined more closely.

The Siegel study was conducted prior to the 1980 census., The population projections used in this study were based on the assumption that "the economic development program will be actively pursued and substantially implemented". Based on the 1973 census and this assumption, Siegel estimated the 1978 CNMI population at 18,300 and projected a 1990 population of 31,300.

Soon after the Siegel study was completed, the preliminary results of the 1980 census were released. According to the census, the Commonwealth had a 1980 population of 16,900 (rounded). This proved to be a significantly lower population than had been projected from the 1973 census (approximately 3,000 people). In large population areas, this difference would not be a matter of concern. However, with such a small population base, even a difference of 3,000 people can have an impact on the CNMI health care delivery system. This is especially true when population extrapolations are made into the future.

Four studies were conducted after the preliminary census results were released. All of them addressed the need for a new health care facility. Two of the studies were done in the spring of 1980. These two studies were conducted by Moore-Johnson, Inc. from Washington D.C. and Mytinger and Associates from Honolulu Hawaii. Both of these reports used a much smaller population base in the 1990 estimates than had previously been determined. Moore-Johnson, Inc. projected a 1990 population of 22,558 and Mytinger projected a 1990 population of 21,000.

Although the population bases in these two reports were similar, the resulting hospital specifications and costs were not. Moore-Johnson, Inc. recommended a 100 bed hospital be built with 87,350 square feet. Their cost estimates on a hospital this size were $15.9-22.6 million. Mytinger and Associates recommended a 60 bed hopsital be built with 116,161 square feet. Mytinger and Associates did not provide a cost estimate on building such a facility.

Another report was submitted to the CNMI government on the proposed medical facility by the Department of Health and Human Services. This report projected the 1990 poulation to be 25-30,000 and recommended that a 90 bed facility be built. This facility would have 100,363 square feet and cost $24,452,000.

In addition to the "outside facility estimates", the CNMI government organized a Hospital Assessment Team, whose purpose was to study hospitals in Micronesia and analyze their respective situations in anticipation of the proposed construction of a new hospital on Saipan. The team was composed of representatives from Marianas Public Works, the Department of Public Health and Environmental Services, the Planning and Budget Affairs Office, and the Commonwealth Health Planning and Development Agency. Their recommendation was that a hospital encompassing 88,000 square feet be built at a cost of $21,058,000.

A summary of these recommendations is contained on the following table.

SUMMARY OF CONSULTANT RECOMMENDATIONS

Projection Category (1990)	CHPDA	Siegel	SMP	Mytinger	MJI	Region IX
Population	25,666	31,332	27,500	21,000	22,558	25-30,000
Patients Days (rate)	701/1000	823/1000	662/1000	600/1000	854/1000	-
Outpatient Visits	83,415	94,229	113,216	Not Indicated	70,371 (1)	-
Required Beds (total)	80	92	90	60	100	90
BGSF	117,900	141,911	104,114	116,161 (2)	87,350	100,363
Cost Estimate	$34,509,094	$41,537,065	$23,316,000	$Not Indicated	$15,9-22.6M	$24,451,775

(1) "Projected" by CHPDA based on rate of change between 1980 and 1985.
(2) Mytinger indicated a DGSF figure only. CHPDA multiplied the DGSF by 1.25 to convert to BGSF for comparasion purposes.

LEGEND:

CHPDA-Commonwealth Health Planning and Development Agency
Siegel-Siegel and Associates (Orinda, California)
SMP-Stone, Marraccini and Patterson (San Francisco, California)
Mytinger-Mytinger and Associates (Honolulu, Hawaii)
MJI-Moore-Johnson, Inc. (Washington, D.C.)

In sum, there have been at least nine reports compiled on the CNMI health care system which have addressed the need of a new health care facility in the Commonwealth. Although these reports have varied on specifices as to the exact type of new facility which is required, they all have one major component in common; THERE IS A NEED FOR A NEW MEDICAL FACILITY IN THE CNMI. In view of the pressing health needs currently facing CNMI residents and the ever spiraling economy in recent years, the reports have also all recommended that construction of this facility commence as soon as possible. The question of "Why is a new facility needed?", thus, has been answered.

II. APPROACH

Once the question "Why is a new facility needed" has been answered, a new question immediately arises. This question is: "What type of a facility is needed".

As the preceding section has indicated, there have been as many answers to that question as there have been reports. The CNMI has had a wealth of information upon which to base it's final recommendations for the construction of a new facility. All reports have been carefully reviewed. The CNMI believes that although Siegel and Associates used high population estimates, their approach and methodology is basically very sound. So, their basic approach has been utilized, but with a smaller 1990 population projection. Basically the approach follows eight steps which analyze the population, how the population uses the services, how bed needs are determined and what will specifically be required of a facility in terms of square feet and cost. These steps are as follows:

Step 1: Identify and Define the Population at Risk

As a starting point, the CNMI viewed the consultant-prepared estimates as a range of possible futures. There is an estimated low of 20,000 and an estimated high of 31,332 with the other projections falling somewhere in between. The difference between the high and the low is over 10,000 population. For an area the size of the CNMI, this difference must be minimized in order to minimize the potential impact of a "wrong guess." The CNMI, using Siegel's approach of estimating the probability of either projection actually happening, assumed that both the high and the low had an equal chance of occuring. A probability of .5 was assigned to each number. To calculate the result, simply take the average of the two numbers. The result was 25,666.

One reason for taking the lower estimate was that until the 1980 census data was taken, most projections were very high for 1980 and other points in the future. Since the 1980 count resulted in a much smaller figure than had been anticipated, it is reasonable to expect that future populations may also reflect lower numbers.

The CNMI then applied the percentages (determined from Siegel's population estimates) to this total population to obtain estimate of "citizens", "non-citizens", age and sex groupings. The follow table displays the results.

Group	Ages		
	00-14	+15	TOTAL
Citizens	8,203	9,533	17,738
Non-citizens	1,982	5,948	7,930
Females (age 15-44)		4,334	
TOTAL	10,185	15,481	25,666

Step 2: Estimate Admissions for 1990

Admission rates for CNMI residents in prior years were estimated and compared with U.S. Mainland rates and rates for the Pacific Basin Region. The findings are summarized on the following table.

Rate of Admission for 1990
(Per 1,000)

Service	Admissions/1000 Population
Adult medical/surgical	126
Pediatrics	64
Obstetrics	175

Step 3: Estimate Hospital Admissions for CNMI Resident Population in 1990.

This was calculated by multiplying the population "at risk" by the admission rate for each service.

Service	Admissions
Adult medical/surgical (15,481 x .126)	1,951
Pediatrics (10,185 x .064)	652
Obstetrics (4,334 x .175)	758

Step 4: Determine the Expected Average Length of Stay (ALOS).

Historical patterns of ALOS were compared with U.S. Mainland rates and Pacific Basin rates. Using these data, an expected future length of stay was established.

1990 Average Length of Stay

Service	ALOS
Adult medical/surgical	6.50
Pediatrics	4.30
Obstetrics .	3.25

Step 5: Estimate Expected Patient Days for 1990.

The average length of stay in each department was multiplied by the expected admissions for that department to determine the patient days in 1990.

Expected Patient Days 1990
By Department

Service	Admissions	ALOS	Patient Days
Adult medical/surgical	1,951	6.50	12,682
Pediatrics	652	4.30	2,804
Obstetrics	758	3.25	2,464
TOTALS	3,361		17,950

Step 6: Calculate Average Daily Census (ADC).

The average daily census is the final figure necessary to determine bed supply. The average daily census was found by dividing patient days by 365 (days in one year).

Expected Average Daily Census
1990

Service	ADC
Adult medical/surgical	34.75
Pediatrics	7.68
Obstetrics	6.75
TOTAL	49.18

Step 7: Bed Need Models

Steps 1-6 provide the foundation by which the hospital size and services will be essentially determined. Once these steps have been accomplished, the next major consideration is to choose and apply a bed need model which will utilizes these findings. Several options are available and each option entails specific assumptions.

Three bed need models were applied to the above data with, as might be expected, three different sets of results. The three models are briefly summarized below.

a) Service Specific Target Occupancy Ratios

This model assumes that for each service or department (adult medical/surgical, obstetrics, pediatrics) an optimal or "ideal" occupancy rate should be used to determine the needed beds. The rates applied in this model are: adult medical/surgical - 85%, pediatrics -75%, and obstetrics - 70%. Using these occupancy rates, the following bed needs were determined.

Service	Beds Required
Adult Medical/Surgical	41
Pediatrics	10
Obstetrics	10
Total (minus psych/long term care*)	61

b) Overall Target Occupancy Rate

This model assumes that the "ideal" or optimal occupancy rate for all departments is the same. In this case, the rate applied was 75%.

Service	Beds Required
Adult Medical/Surgical	46
Pediatricts	10
Obstetrics	10
Total (minus psych/long term care*)	66

c) Limited Scheduling Patient No Loss Model

Detailed documentation of this method appears below from a monograph produced by James A. Dei Rossi; Alternative Models for Transforming Expected Inpatient Bed Utilization into Bed Requirements Estimates. This model requires the user to specify the maximum length of time which a patient must wait for admission. It also requires the user to specify the percentage of patient days which are for emergent and elective admissions. The model assumes that any patient seeking admission is either admitted or enters a queue (waiting line), and that a patient never stays in a queue longer than the maximum waiting time. This assumption is equivalent to assuming that the hospital schedules elective admissions. The impact of scheduling can be significant in reducing the number of beds required.

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*Bed requirements for psychiatric/long term care were calculated in a different manner.

The assumptions in using this model were that all cases were emergencies and that the maximum waiting time would be no more than one hour. These assumptions were used because no statistics were available on the proportion of cases which were emergencies and because the results would be artificially "inflated" so that adequate coverage would be assured.

To estimate the number of beds required, the curves in the graph (in appendix) were used. These curves show the beds required for each average daily census and normalized average waiting time (AWT), where the normalized AWT is calculated by dividing the AWT by the ALOS (in this case 14.05 days and the AWT is one hour or .042 day) so that the normalized AWT = .042/14.05 = 0.003. After calculating the normalized AWT, the point of intersection of the normalized AWT and the ADC curve in the figure is found. The number of beds required is read directly off the bottom axis of the graph. Beds required for ADC values not appearing on the graph as separate curves can be found by interpolation.

The heavy line on the graph displays the final acute care bed need determination. For the CNMI, the beds required to service the estimated ADC in 1990 is 63.

Step 8: Estimate Psychiatric/Long Term Care Bed Needs for 1990.

Psychiatric/Long Term Care Beds were estimated on the Limited Scheduling Patient No Loss Model. The following assumptions were used as the basis for the bed needs.

Psychiatric Long Term Care Bed Needs 1990

a.	Patient Days/1000 residents	135
b.	Patient Days in 1990	3,465
c.	Average Daily Census in 1990	9.5
d.	Estimated Bed Need	17

Step 9: After careful review of each of these models, it was decided that the Limited Scheduling Patient No Loss Model most closely matched the needs of the Commonwealth. Using this model, the 1990 bed need projection is 63 acute care beds and 17 psychiatric/long term care beds, for a total 1990 bed projection of 80. All space requirements and cost estimates are based on this figure.

III. Space Requirements and Cost Estimates

SUMMARY AREAS		NSF	DGSF
Nursing Units			
Acute Care (74 beds)	(1.6)	14,920	23,872
Newborn Nurseries (16 bassinets)	(1.4)	1,200	1,680
Labor-Delivery/Surgical-Recovery Suite/ Central Sterile Supply	(1.6)	5,170	8,272
Emergency	(1.6)	2,760	4,416
Hemodialysis Unit	(1.2)	640	768

SUMMARY AREAS		NSF	DGSF
Diagnostic and Therapeutic Services			
Diagnostic Radiology	(1.6)	2,180	3,488
Physiological Testing and Rehabilitation Service	(1.6)	1,710	2,736
Laboratory Services	(1.4)	2,180	3,052
Pharmacy	(1.2)	640	768
Administrative Support Functions			
Administration	(1.4)	1,540	2,156
Admitting	(1.2)	340	408
Medical Records	(1.2)	1,040	1,248
Medical Library and Education	(1.2)	920	1,104
Business Office	(1.2)	1,460	1,752
Lobby and Information	(1.2)	800	960
Support Services			
Ready Stores and Purchasing	(1.2)	2,400	2,880
Dietary	(1.2)	3,270	3,924
Laundry and Housekeeping	(1.2)	1,710	2,052
Staff Facilities	(1.2)	480	576
Maintenance and Engineering Services	(1.2)	1,200	1,440
		Total Hospital	67,552
Ambulatory Care Clinics			
Specialty Care and Health Education	(1.6)	2,200	3,520
Primary Care and Dental Care	(1.6)	1,300	2,080
Support Area	(1.4)	560	784
	Total Ambulatory Care Clinics		6,384
Public Health Center			
Patient Reception, Screening and Processing	(1.4)	1,500	2,100
Primary Care Module	(1.6)	1,050	1,680
Environmental Health and Sanitation	(1.4)	1,740	2,436
	Total Public Health Center		6,216

Total BGSF (total DGSF x 1.15)

Hospital 67,552 x 1.15 = 77,685
Ambulatory Clinics 6,384 x 1.15 = 7,340
Total Navy Hill Site 85,025 GSF
Public Health Center 6,216 x 1.05 6,600 GSF

TERMINOLOGY:

1. Net square feet (NSF)--usable area usually wall to wall.
2. Department gross square feet (DGSF)--net area plus walls and corridors within a department or service.
3. Building gross square feet (BGSF)--includes building mechanical space, exterior walls, and public circulation areas.

PROJECT BUDGET: ASSUMING TWO YEARS OF APPROPRIATION AND A/E-G.M.P. APPROACH

1. Construction Cost	
Hospital 77,685 BGSF x $167.35*	$13,000,585
Clinics 7,340 BGSF x $112.50	825,750
2. Contingencies and Change Orders	
(10% of construction cost)	1,383,665
3. Subtotal and Construction Cost	
(Lines 1 and 2)	15,210,000
4. Group 2 and Group 3 Equipment	1,740,000
5. Preliminary Cost--Site Development	1,860,000
6. Architecture and Fees**	1,860,000
TOTAL PROJECTED PROJECT COST	$20,670,000

*U.S.V.I. cost per square foot @ $110.10 for mid-point of construction 7/81; start construction 10/82, 24 month duration; mid-point 10/83; 27 months escalation @ 0.8% per month = 21.6% = $133.88; convert to Saipan cost @ 125% = 167.351SF.

**Architecture and Fees detailed on next page.

Details of Architecture and Fees	Hospital and Clinics
a. A/E Compensation Hospital & Clinic @ 8%	$1,216,720
b. A/E Reimbursable	60,000
c. Consultant Cost Program Definition & Equipment	65,000
Implementation, Manuals and Counterparting	180,000
d. Site Survey	30,000
e. Environmental Impact Statement	10,000
f. Energy Conservation Study	A/E
g. Inspection and Testing	50,000
h. Project Coordination (duration of project)	146,000
i. C.M. Fees	100,000
SUBTOTAL FEES	1,857,720
ROUND TO	$1,860,000

Attachment #2

POWER DISTRIBUTION SYSTEM REPLACEMENT

CAPABILITY STATEMENT

Agency/Bureau: Department of Interior/Territorial and International Affairs

Appropriation: Administration of Territories

Activity: Commonwealth of the Northern Mariana Islands

Proposed Amendment: $5,000,000 for Power Distribution System Replacement

Current Program: Saipan now has a new $9 million dollar power plant for which we are very grateful. It has a capacity of 21 Megawatts and new 600 kw generators for Tinian and Rota. However, the distribution lines are very old and need to be replaced. A contract will shortly be awarded to conduct the necessary A/E for the Power Distribution System Replacement. This work should be completed within six months from contract award.

The construction of a hardened power distribution system on Saipan has been planned for several years now, but has not been carried out due to the unavailability of funds. Construction of the system must be undertaken to ensure availability of electrical power to meet the rapidly growing demand for power on Saipan, the population center as well as the industrial and economic center of the Commonwealth. Such construction will alleviate the recurring electrical outtages associated with the operation and maintenance of the present power distribution.

Attached is an updated section of the Physical Development Master Plan describing the power situation, the recommended improvements and estimated costs. We will submit the cost figure derived from the completed A/E as soon as it is available.

Feasibility: If the remaining $4 million of the $9 million authorized in PL95-348 for the Power Plant and for Distribution Improvements is appropriated for the fourth generator for the new power plant, a new $5 million authorization covering the needed distribution system improvements will be necessary.

The need for the project is evidenced every time the Commonwealth is hit by a typhoon. The damages to the distribution system repeatedly add up. The resultant spoilage of food products as a result of extended periods of time without power is even more costly. The completion of this project would negate the continuing costly expense of replacing damaged lines on a piecemeal basis after each typhoon.

Capability: All requested funding for the Power Distribution System Replacement will go to construction as recommended by the A/E consultants.

The actual construction would begin in early FY 1982. The construction is expected to take twelve months from start of construction.

The requested authorization is for $5,000,000. The requested FY 1982 appropriation is for $5,000,000.

Outlay Effect:

	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
FY 1982	0.0	4.0	0.5	0.5

Additional Information: See Attachment 2A

ATTACHMENT 2A

NOTE: The following is an updated version of the Power Program as shown in the Physical Development Master Plan

POWER

EXISTING CONDITIONS

Saipan's power system presently suffers many shortcomings which have to be corrected. The primary power source, the power barge "Impedance", is scheduled to be drydocked. The distribution system suffers from poor maintenance. Frequent outages are caused by lightning, failing transformers and storms. Wires are corroded, hardwares are old and difficult to replace, and poles are rotting.

Electrical energy conservation practices are not in effect.

Growth of electrical demand is anticipated to be significant. The annual growtn rate will approach 9½ per cent, but due to the relatively small size of Saipan's system, growth will occur in quantum jumps. At best, therefore, growth will be dramatic and must be analyzed with respect to development project.

Management/Operation

The Public Works Department of the Northern Mariana Islands (NMI) government now operates the entire electric power system. The Saipan Utilities Agency has been established with this division to operate the electric power, water and sanitation systems in Saipan. Current peak usage is 13.1 MW (13,100,000 watts or 13,100 KW). During FY 1979, about 77 million KWH were generated by the system.

Power Distribution

The distribution system on Saipan consists of about 72 miles of 13.8 KV primary lines and approximately 96 miles of secondary lines. These circuits consist of various size conductors. Circuits which service the area south of the power plant carry 80% of the system loads.

The condition of the lines ranges from fair to poor, with numerous unscheduled outages caused by lightning, burned out transformers and storms. Due to budgetary constraints, maintenance is less than optimal with repair and replacement of corroded wires, hardware, and rotten poles occuring less frequently than reasonable maintenance shedules call for.

PLANNING FACTORS

Load Growth

Saipan is a relatively small area facing dramatic quantum growth from international interests such as the economy of Japan and U.S. military plans. It should be noted that load increases on a system the size of Saipan's existing 500 KW capacity, requires special consideration. Therefore, projections of anticipated load growth based on anticipated socioeconomic factors were developed. These are summarized in Table 1.

Table 2 synthesizes the gains and losses through the planning period. These data indicated an average annual growth of 9.5% in Saipan's power requirements. In 1985 the peak demand is expected to reach 22.98 MW. If the 9.5% growth is projected, the system will peak at 30 MW in 1989 and 40 MW in 1992. Moreover, major social and economic changes would affect these projections.

Hardening

Recent experience has emphasized the need to "harden" the power system against tropical storms and typhoons. Both on Saipan and neighboring Guam, the distribution system is the first to fail. Therefore, as lines are extended or replaced, an evaluation of the cost effectiveness of various hardening techniques will be made. The eventual burial of the line on Beach Road from Micro Beach to Wallace Road, for example, has already been identified. This action will markedly reduce the recovery time of restorative operations to customers throughout the entire area.

Conservation

Forced dependence on oil fuel will mean drastic increases in Saipan's energy bill throughout the planning horizon and beyond. Although technological breakthroughs may come any time, it is almost certain that energy will remain as ever precious commodity. Therefore, an electrical energy conservation plan similar to the type in the planning stage in the U.S. must be implemented on Saipan. The plan would establish a power budget for various types of clients with a heavy penalty for any power consumed beyond the established budget. Along this line, Governor Carlos

Camacho have initiated preparatory work in establishing a Public Utility Commission to regulate the public utilities to achieve a greater measure of self-sufficiency. In addition, the Governor's Task Force on Energy have been very active in finding ways and means of weaning the Commonwealth of the Northern Mariana Islands from fossil fuel dependency.

CAPITAL IMPROVEMENT RECOMMENDATIONS

The short-range recommendations for the development of the Saipan Power Distribution and Power Generation Systems include:

- Develop a program for the systematic replacement of primary and secondary lines. Redundancy and hardening of essential primary lines should be considered.

- The extension of electric power to resort and agricultural areas in need of development.

The proposed system will serve island growth to the 40 MW level, matching the proposed power plant's ultimate capacity. All four circuits will have a 10 MW capacity. Circuits are expected to run along major roads. Major developed areas and facilities such as the airport, new hospital, industrial area, resort area, and commercial area will have a back-up circuit. One circuit from the new power plant paralleling West Coast Highway should be hardened immediately to provide assurance of rapid renewal of power service and long-lived capital investments in the generation and distribution subsytems.

POWER DISTRIBUTION

ESTIMATED COSTS

NEW LINE CONSTRUCTION			
Primary Line 10 miles @ $70,000/mile	10 x 70,000	$700,000	
Secondary Line 20 miles @ $40,000/mile	20 x 40,000	$800,000	
Commercial & Residential Hook-Ups Estimated 1400 during plan period @ $250	1400 x 250	$350.000	
TOTAL:			$1,850,000
REPLACEMENT OF EXISTING LINE			
Estimated replacement needs in short term are 33% of existing Primary & Secondary lines			
Primary Line 22 miles @ $70,000/mile	22 x 70,000	$1,540,000	
Secondary Line 30 miles @ $40,000/mile	30 x 40,000	$1,200,000	
Primary Line - Hardening Approx. 7.5 miles @ $80,000/mile	7.5 x 80,000	$600.000	
TOTAL:			$ 3.340,000
		POWER DISTRIBUTION COST:	$5,190,000

Attachment #2.1

POWER PLANT EXPANSION

Capability Statement

Agency:	Department of Interior/Territorial and International Affairs
Appropriation:	Administration of the Territories
Activity:	Commonwealth of the Northern Mariana Islands
Proposed Amendment:	FY 82 Appropriation for 7 megawatt Power Generator procurement: $4,400,000.
Current Program:	It is necessary to procure a fourth 7 megawatt generator for installation at the newly completed Saipan Permanent Power Station. The power plant was constructed with a $5 million appropriation under a $9 million Authorization made in FY 79 (P.L. 95-348). The plant was originally planned to meet the immediate needs of Saipan and was designed to accommodate the generator we are now requesting. The maintenance schedule of the new system will require shut down of one generator thus reducing the generating capability below demand, forcing reliance on the expensive and antiquated backup system. This situation will continue as long as we do not have the fourth generating unit.
Amount Budgeted:	FY 1979 Authorization $9 million FY 1980 Appropriation $5 million
Feasibility:	Funding of this request would enable the CNMI to procure and install one needed 7 megawatt power generator unit. Because the procurement and installation period exceeds one year, the actual installment would have to occur after the maintenance cycle had caused a reduction in power capability below the power demand. Thus in order to avoid exposing Saipan to inadequate electrical supply for a prolonged time, it is critical that the procurement process be instituted immediately and preferably not later than the first quarter of FY 82.
Capability:	With a 4.4 million dollar appropriation, the CNMI could procure and install one 7 megawatt power generator within 14 months from date of order. This would be a one-time requirement which would complete the Saipan power plant and thus accommodate peak demand until 1984 and average daytime demand until 1986 without resorting to the use of the backup generating system.
Outlay Effect:	The outlay schedule for FY 82 is as follows:

1st Quarter	2nd Quarter	3rd-Quarter	4th-Quarter
$4,400,000	-0-	-0-	-0-

Additional Information:	See "Justification for a 4th Diesel Generating Unit for the Saipan Permanent Power Plant" (Attachment 2.1A).

Attachment #2.1A

POWER PLANT

Justification for Fourth Generating Unit

In order for Saipan to sustain an adequate level of reliable electric power, it is essential that added power generating equipment be provided and installed in the Saipan Permanent Power Plant as soon as possible. This report traces the background for the need for the added power and covers the essential aspects relating to the immediate necessity of a fourth diesel generating unit.

BACKGROUND

Prior to the erection and commissioning of the Saipan Permanent Power Plant, in May 1980, the Army Power Barge "Impedence" was he primary source of electric power. It was a conventional type steam boiler power plant originally commissioned in 1943, and brought to Saipan in November 1975. Its age, condition, unreliability, inefficiency and high maintenance costs resulted in uneconomical operation and numeral unscheduled outages. The Government responded to this unsatisfactory situation by engaging Burns & Roe Pacific, Inc. and taking the necessary steps to procure a new power plant.

The limitations of funds and an austerity program dictated that the new power plant be sized to provide only the immediate electric power needs of Saipan. When an opportunity presented itself to obtain a 33% plant size increase, at a rether reasonable cost addition, the financial position of the Government did not permit taking advantage of the situation. However, due to a fortunate set of circumstances, we succeeded in obtaining, at an advantageous price, a well rated and well equipped power plant which included provisions for future addition of another diesel electric power generating unit. The new diesel generating plant was commissioned in May of 1980, and has been operating at an acceptable economic and reliable level, It can at present provide for the normal and average power demands of the Island. However, during periods of peak demand, additional power back-up is required from the existing standby diesel power plant.

LOAD GROWTH

There has been in the recent past, and there will continue to be, an increase in the installation of resort facilities, housing, businesses, entertain and other facilities on the Island. Along with this expansion will be a continuing increase in power demands and the need for reliable distribution capability. Some of this increase in installations include:

- Hafa Adai Hotel - 96 room expansion program scheduled for completion this year.

- White Sands Hotel - 36 rooms scheduled for opening this year.

- Royal Taga Hotel - 100 room expansion program scheduled for completion in 1982.

- Hyatt Regency Hotel - contemplating a 250-room expansion in about 1982-1983.

- Mariana Island Housing Authority will complete 48 units by July 1981, and expects to provide 30 more units by March 1982.

- Kan Pacific Corporation resort of 100 rooms in Marpi is scheduled for opening in 1982.

- Far East Broadcasting Corporation will soon require about 1,000 KW.

- New stores, shopping centers and restaurants will be built along with the economic growth of the island.

- Population power demands will increase along with the increased use of appliances, electric lighting, air conditioning, etc.

AT present, and as expected in the future, the average 24 hour power load is about 77% of the peak load, while the average daytime load is about 90% of the peak. In November, 1980, a peak of 15.1 megawatts was reached. Based upon past power demands, present operations and anticipated island growth, the projected load demands are as follows:

YEAR	PEAK MW	DAYTIME AVERAGE MW	24 HOUR AVERAGE MW
1981	16.5	14.8	12.7
1982	17.8	16.0	13.7
1983	19.2	17.3	14.8
1984	20.8	18.7	16.0
1985	22.4	20.2	17.2
1986	24.2	21.8	18.6

PRESENT STATUS

In the normal operation of a diesel power plant it is essential that back-up and standby power be continuously available. This back-up and standby power is necessary for emergencies, unscheduled outage, and periodic maintenance and inspections. To serve our present power needs we have three 7,200 KW units in the new plant and four diesel generators with a total capacity of 7,400 KW in the existing standby plant. It is prudent and good practice to operate diesel engines up to about 90% of their rated capacity. This concept is normally followed in our plant operation. The large engines in the new plant, operating on heavy fuel oil, are the most efficient and operationally economical of all the diesels in our power generating system. Two of these engines are normally operated to carry our daily power load demands. As we approach our daily peaks, one or two of the smaller engines in the standby plant are started to carry us past the high demand periods.

From May through August 1981, the three new diesel engines are each alternately scheduled for their 7,000 hour annual engine overhaul. Thus during this four month period, one of the engines of the new plant will not be available for power generation or emergency back-up. We will then be depending upon the two remaining engines, plus the engines in the standby power plant, to carry us through the four month overhaul period.

NECESSITY FOR ADDITIONAL POWER GENERATING CAPABILITY

Burns & Roe Pacific, Inc., in their letters of May 28, and October 10, 1980, urged immediate action in taking necessary steps to procure a fourth diesel generating unit for the power plant. It was pointed out that there will not be adequate standby power in 1982, if more generating power is not made available.

The Burns & Roe recommendation was based upon an engine overhaul period from February through April 1981. Thus all engines will be available after May 1981, which is the time the major annual load increases occur. The overhaul period has been rescheduled by Mitsubishi, however, thus the three engines will not be simultaneously available until about September 1981. Under these circumstances, and with the anticipated daytime and peak loads, if an unscheduled outage occurs on one of the two usable main diesels during the overhaul period, it may be necessary to temporarily curtail electric service. The anticipated peak demand is about 16 MW. With one large engine down the total power output capability is about 14.5

MW with the remaining large engine and the standby smaller engines operating at full capacity.

It is usual in diesel engine operation that temporary stoppages will occur. This is often due to the necessity for some minor adjustments, maintenance or repair. It is unrealistic to expect months of continuous uninterrupted safe operation. Thus standby and back-up capability is essential. This back-up will be marginal or hardly adequate during the May through August 1982 overhaul period. Unless provisions are made for temporary power during this period, power supply curtailments will be required.

It is essential that action be taken immediately to procure a fourth diesel generating unit for the power plant. It is estimated that it will take a period of 14 months minimum from Contract to Commissioning. Thus, a Procurement Contract by May 1, 1981, could perhaps result in obtaining a new operating unit by July 1982. It may not be soon enough to eliminate our anticipated power curtailment problems but it will adequately fulfill our power demands after the unit is put in operation as the maintenance cycle with the inherent problems will continue in the future.

Based upon the projected electric power demands the addition of the fourth unit with the back-up of the units on the standby power plant should fulfill the Saipan anticipated peak load requirements during the three or four month overhaul period through the year 1985. Additional power generating equipment must also be installed and ready for operation at the next engine overhaul period in May 1986.

In response to a request by the Burns & Roe Manager, a quotation for the provision and installation of a fourth diesel engine generator set was received from Mitsubishi International Corporation on July 10, 1980. This offer was valid until September 30, 1980 and was in the amount of $4,400,000.

Attachment 2.2

GOVERNMENT OF THE NORTHERN MARIANA ISLANDS

Cost of Petroleum Products
Fiscal Years 1977 - 1982

COST OF PETROLEUM PRODUCTS	YEAR	Residual* Fuel Oil	Automotive Diesel Oil	(IN THOUSANDS) Lubricants, Solvents, Etc.	TOTAL
	1977	1,767.8	230.1	17.9	2,015.8
	1978	2,012.8	67.1	8.3	2,088.2
	1979	2,469.3	69.4	9.1	2,547.8
	1980	3,483.3	562.7	221.8	4,267.8
(Estimate)	1981	4,433.2	1,859.7	442.4	6,735.3
(Estimate)	1982	6,461.8	354.9	614.6	7,431.3
Total		20,628.2	3,143.9	1,314.1	25,086.2

AVERAGE COSTS	YEAR	@ BBL *	@ GALLON
	1977	12.2058	.446
	1978	10.6148	.485
	1979	13.0022	.640
	1980	23.1926	.971
(Estimate)	1981	38.4181	1.210
(Estimate)	1982	47.2097	1.487

* Net of "Old Oil Entitlement"

Attachment 2.2

GOVERNMENT OF THE NORTHERN MARIANA ISLANDS

Excess of Petroleum Costs Over Inflationary Adjustments
Fiscal Years 1977 - 1982

CHANGE IN IMPLICIT PRICE DEFLATOR	YEAR	Beginning Implicit Price Deflator	Ending Implicit Price Deflator	Δ%	Δ Percentage Over Base
	1977	BASE	153.59	BASE	BASE
	1978	153.59	167.14	8.82	8.82
	1979	167.14	181.67	8.69	18.28
	1980	181.67	198.16	9.08	29.02
(Estimate)	1981	198.16	214.12	8.05	39.41
(Estimate)	1982	214.12	233.57	9.08	52.07

CHANGE IN FUEL COST	YEAR		(IN THOUSANDS)		
	1977	BASE	2,015.8	BASE	BASE
	1978	2,015.8	2,088.2	3.59	3.59
	1979	2,088.2	2,547.8	22.01	26.39
	1980	2,547.8	4,267.8	67.51	111.72
(Estimate)	1981	4,267.8	6,735.3	57.82	234.13
(Estimate)	1982	6,735.3	7,431.3	10.33	268.65

EXCESS OF COST OVER INFLATION ADJUSTMENTS	YEAR	Δ% In I.P.D.	COST ADJUSTED FOR INFLATION	ACTUAL COST	DIFFERENCE
	1977	1.00	2,015.8	2,015.8	-
	1978	1.0882	2,193.6	2,088.2	105.4
	1979	1.1828	2,384.3	2,547.8	(163.5)
	1980	1.2902	2,600.8	4,267.8	(1,667.0)
Total Actual					(1,725.1)
(Estimate)	1981	1.3941	2,810.2	6,735.3	(3,925.1)
(Estimate)	1982	1.5207	3,065.4	7,431.3	(4,365.9)
Total Estimated					(8,291.0)
Total					(10,016.1)

Attachment # 3

HARBOR FACILITIES

Capability Statement

Agency/Bureau:	Department of the Interior/Territorial and International Affairs
Appropriation:	Administration of Territories
Activity:	Commonwealth of the Northern Mariana Islands
Proposed Amendment:	$15,000,000 (estimated) for Improvements to the Saipan Harbor.
Current Program:	The Saipan harbor facilities are not only sub-standard, but are also dangerous (see Attachment 1A). We are using $291,400 of Covenant funds to prepare plans and detailed A&E. Phase I, the preliminary plans, will be completed in June, 1981, and Phase II, detailed A&E will be completed in August, 1981. The Department of Interior has also contracted with the Army Corps of Engineers to complete an evaluation of the Saipan Harbor needs. This study was required by P.L. 96-597, Section 301. The information from these studies will provide a justified amount of money to improve Saipan harbor facilities. We estimate this figure to be $15 million. We will submit a more precise figure following the completion of the A&E in August. No work has been completed to date. Since there is no available funding in the amount needed for this scale project, no improvement can expected to be accomplished.
Feasibility:	No authorization for the Saipan Harbor improvements currently exists. While under U.S. management, the existing facilities were allowed to deteriorate to point now where a major sum of money is required to restore and upgrade the facility. The necessary improvements are essential to the economic well-being and development of the Commonwealth. This project is one of the highest priority projects in the Commonwealth.
Capability:	All requested funding for Saipan Harbor improvements will go to the construction of the necessary improvements as recommended by DOI and our own consultants. The actual construction would begin in mid-FY 1982 following the completion of the detailed A&E. The construction is anticipated to take 18 months. The amount requested for authorization is estimated at $15,000,000. The FY 1982 appropriation request is estimated at $7,500,000 and for FY 1983 at $7,500,000. The actual amount requested will be made in August when the detailed costs will be known from the completed A&E.

Outlay Effect:	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
FY 1982	0.0	10.0	0.0	0.0
FY 1983	0.0	4.0	1.0	0.0

Additional Information: See Attachment 3A and Attachment 3B

Attachment # 3A

HARBORS

Although the airports are a key to the Northern Marianas for passenger movement, the harbor and dock facilities are more important to overall economic growth in the islands. The movement of most consumer goods to the Marianas and the reliance upon local subsistence fisheries by many of the people require adequate docks and harbor facilities.

Establishment of regular and reliable sea cargo services between other countries and the Northern Marianas will be a critical factor in the growth and development of the economy. The problem of promoting shipping services for the Northern Marianas is and has been that the whole Trust Territory area, including the NMI, generates a relatively small volume of cargo. In addition, physical facilities in NMI ports have been rather poor, creating inefficiences in cargo handling and lengthening vessel turn-around times.

During the plan period it is anticipated that the volume of sea cargo transported to the NMI will increase, with the increased capital improvements program, as well as rising personal incomes and population growth. Increased capital improvements resources will also make substantial port development possible within a few years. In sum, the efficiences achieved through port improvements, coupled with general growth in economic activity throughout the NMI, will increase the appeal of the Northern Marianas as a port of call for vessels and ships.

Planning for Harbors and Dock facilities in the Northern Mariana Islands and more specifically for Saipan must consider the following issues:

* Saipan is favorably located and with its exclusion from provisions of the Jones Act could become a major transshipment point for cargo vessels in the western Pacific.

* Inter-island sea transport between Saipan and neighboring islands is important for the overall economic development of the Northern Mariana Islands.

* Commercial fisheries could become an important industry in the economy of the Northern Mariana Islands.

* Recreational boating, sport fishing and subsistence fishing require improved docks, pier spaces and ancillary shore

facilities in order to grow and contribute to the overall economic development of the Northern Marianas.

EXISTING CONDITIONS

Management of docks and harbors in the NMI is presently the responsibility of the Department of Public Works. On Saipan, a Port Control Officer with a staff of five has administrative charge over entry and departure of vessels and responsibility for generally overseeing dockside operations.

Sea Transport

As of the beginning of 1977, eight private shipping companies have been granted rights to enter ports in the NMI, of which six have established scheduled services. The companies provide service between Saipan and ports in the Far East, Australia and on the U.S. West Coast, including Hawaii. Routes often include ports in the Trust Territory as well. Frequency of service varies between roughly 40 and 60 days, depending upon route structure. In addition, barge service on a weekly basis has been established between Saipan and Guam by two private companies which provides intermediate or transshipment service to Rota and Tinian.

For calendar year 1976, a reported 68,803 revenue tons (R/T) moved through NMI ports. Inbound cargo accounted for 59,485 R/T and outbound cargo 9.318 R/T, or about 86.5 percent and 13.5 percent, respectively, of total cargo volume. The 1976 figure represents an increase of about 44 percent over 1975's reported 47,756 total revenue tons. The Port of Saipan handled 64,503 R/T, or nearly 93.8 percent of all NMI cargo in 1976, while Tinian handled 2,359 R/T (3.4 percent) and Rota 1,941 R/T (2.8 percent). Earlier records of cargo movement are fragmentary; however, it does appear that increases or declines in the amount of cargo moving through the Port of Saipan have been closely tied to the size of public and private construction activities.

Physical Facilities - Saipan Harbor and Charlie Dock

Saipan Harbor, which consists of the outer anchorage, Garapan Anchorage, and Puetton Tanapag, is the port of entry and is the administrative center for GNMI. The harbor is formed by the waters within a radius of 2/½ miles of the root of the landing at Garapan. The entrance channel of Puetton Tanapag is about 300 feet wide and has a shallow depth of 8.8 m (29 feet). The harbor is sheltered by the barrier reef and is partially protected from winds.

Anchorages. The outer anchorage affords shelter during prevailing easterly winds, but none during infrequent westerly storms. This anchorage, which lies from 3 to 5 miles offshore, is suitable as only temporary anchorage for large vessels.

The inner anchorage, which includes Garapan Anchorage, contains numerous berths in depths ranging from 14.6 m (50 ft.) to over 54.9 m (180 ft.), holding ground fair to good, with coarse coral sand. This anchorage lies from 1 mile to 2 miles offshore.

The anchorage area in Puetton Tanapag has been dredged to a projected depth of 9.1 m (30 ft.). A seaplane landing area is located northward of the anchorage area.

Navigation Aids. Tanapag Harbor is equipped with range lights and some lighted buoys. There is also a U.S. Coast Guard Loran Station located on Saipan.

Charlie Dock (Pier C). Saipan's harbor complex consists of a commercial port plus a small boat quay and a pier at which the power barge "Impedence" is currently docked.

As-built drawings or plans for Charlie Dock are not available. The dock was originally constructed by the Japanese prior to World War II and was subsequently improved or expanded. Inspection of the dock in 1972 indicated that the face of dock is a masonry wall consisting of 4' x 4' x 5' concrete blocks.

Charlie Dock C, is L shaped, and has 530 feet of berthing space along its north side. Berths, with depths of 7.6 m (25 ft.) to 6.1 m (20 ft.) are available along the north and west sides of the pier. Depths of 2.4 m (8 ft) are found alongside the south side of the pier.

The channel to the dock, running more or less on a southwesterly line, is 457.2 m (1,500 ft.) long, 91.4 m (300 ft.) wide and 8.8 m (29 ft.) deep. It is marked with lighted and non-lighted buoys set by the U.S. Coast Guard.

Dockside facilities include a 1,115 m^2 (12,000 ft^2) warehouse (Prefab type) constructed by the Trust Territory and presently used as a break-bulk warehouse. For cargo handling, the port has some heavy forklift equipment and trucks available, and has access to heavy cranes (50 ton mobile and 30 ton crawler) owned by NMI Public Works.

A second prefab type warehouse owned by the NMI Government is also located at the port and is presently occupied by port operations and maintenance.

Small Boat Facilities

Facilities for small boat harbors are also woefully inadequate. Only the "Smiling Beach" small boat area provides adequate protection during storms.

In Garapan a pier, 155 meters in length (485 feet) originally constructed by the Japanese and later reconstructed by the U.S. military forces, is in a bad state of disrepair. Erosion of the shoreline, filling in of the formerly-dredged docking area, wooden pilings, and several wrecks make this harbor area inadequate. Garapan Channel is also shallow and narrow and has inadequate navigational facilities further limiting the harbor's usefulness. Shore facilities are inadequate as no docking or tie up space is available. Only recently were concrete boat launching ramps constructed.

Sugar Dock, another Japanese remnant in Susupe consists of a concrete pier 84.1 m (276 ft) in length. Presently the Tinian Co-op vessel utilizes this facility on Tuesdays and Fridays. However, the channel is so shallow that entry and exit can not be made during low tide. A concrete launching ramp is available and daily usage is generally between seven (7) and ten boats. Navigational aids are also inadequate. Adjacent land is all in private ownership further limiting the usefulness of this pier (See Plate 26).

PLANNING FACTORS

A substantial increase in cargo volumes to be handled in NMI Ports is projected between FY 1978 and FY 1985. Factors underlying this growth will be the quantum increase in construction activity which the new political status of the Northern Marianas will bring, rising real incomes of NMI citizens, and a continuing increase in population.

With the recent indications to increase tariffs at the port of Guam, there is an excellent chance for Saipan to pick up significant quantities of transshipment cargo should adequate facilities be available.

Port Calls and Wharf Requirements

The records of the Mariana's District Public Works Department show that about 250 port calls to the Saipan commercial harbor were made by more than 70 different vessels during 1976. An analysis of the information in Table 35 indicates that at least 304.8 m (1,000 ft.) of deep water berths and 182.9 m (600 ft.) of medium depth (6.1 m ± or 20 ft ±) berths are required for the commercial port.

Growth in cargo volumes in the Port of Saipan will be most significant. With the increase in capital improvement projects, durable and non-durable consumer goods, and with a general increase in inter-island trading, total cargo passing through the Port of Saipan is projected to rise to about 138,700 R/T by FY 1985. This represents and increase of about 115 percent over the present base level volume of approximately 64,000 R/T.

Transshipment

Many private businessmen and public officials concerned with shipping in the Northern Marianas have expressed interest in developing Saipan as a transshipment point for cargo passing through the Western Pacific. The Northern Marianas' exclusion (under the Covenant) from provisions of the Jones Act, which governs U.S. coastwide shipping, may in fact permit Saipan to attract foreign vessels carrying cargo from the continental U.S. to Pacific or Far Eastern destinations. The recent proposal to increase tariffs at Guam's Commercial Port, presently the major transshipment point for the Western Pacific, provides anadditional incentive for Saipan to attempt to capture some of the transshipment market.

Significant upgrading of the physical facilities at Saipan's port, including warehousing, and ship and cargo handling capabilities would be necessary.

Inter-island Sea Transport

Efforts should be made during the course of the plan period to accommodate the expansion of inter-island sea transportation, commensurate with increasing requirements. Sea transport service for both cargo and passengers to the sparsely inhabited northern islands will be an important component of inter-island transport. This shipping service, presently known as "field trip" service, is organized and funded by the Government of the Northern Mairanas as a public service to northern islands residents.

Analysis of the District Public Works Department
Log on Port Calls at Saipan Harbor During 1976
Number of Days Ships Were in Port

	Ships										
	0	1	2	3	4	5	6	7	8	Tug & Barge	LCM
January	6	4	5	6	3					7	3
February	1	6	11	4	5					4	2
March	5	9	8							7	1
April	7	7	12	3						5	5
May	11	8	7	1						5	
June	3	13	6	3	2						
July	4	5	6	5	3	2	2	2	2	7	1
August	-	5	17	3	6					4	3
September	3	13	12							6	2
October	2	6	16	6	2					6	4
November	5	5	11	4	1	1	1		1	7	
December	8	11	8	1						5	
Totals	55	92	119	36	22	3	3	2	3	69	21

The basic data was furnished by the Trust Territory of the Pacific Islands District Public Works Department.

The average vessel turn around time, excluding the barge, is 36.9 hours.

The average vessel turn around time, including the barge, is 26.7 hours.

The government itself does not possess a vessel for field trip operations, but leases a ship from a local private operator. The option of obtaining a vessel on a permanent basis to use for field trip shipping, as well as for other services, is currently under consideration. Possibilities include renovation and taking possession of a YFU class landing craft from the U.S. Navy, or obtaining a vessel from the Trust Territory Government under the agreement dividing Trust Territory capital assets with the Northern Marianas.

Inter-island sea transport needs between Saipan and its neighbor islands of Rota and Tinian appear at present to be adequately covered by private shipping companies, principally barge service, plus boats operated by the Tinian Municipality.

Once military base construction on Tinian is initiated, however, it will be important to establish a regular daily ferry service between Tinian and Saipan in order to promote a steady flow of goods and labor which will support both the base construction and later, the base operations.

Fisheries and Recreational Boating

Physical facilities for subsistence fisheries, large scale commercial activities and recreational boating are inadequate and should be improved during the plan period. Improved docks, pier spaces and ancillary shore facilities are needed in order for the subsistence fisheries industry to grow and to contribute to the overall economic development of the Northern Marianas.

An estimate of the number of small fishing craft was made with the help of the Northern Marianas Fishing Cooperatives. Currently, there are fewer than 100 co-op members and only 37 co-op boats. (See Table 36).

Table 36

ESTIMATE OF SMALL FISHING CRAFT - NMI

Island	Number of Members	Number of Small Fishing Boats (Outboards) Co-op Members	Non-Members	Total
Saipan	58	25	53	78
Rota	24	6	2	8
Tinian	16	6	5	11
Total	98	37	60	97

The primary need is to improve launching ramps at convenient locations. The old Japanese seaplane ramps are good for launching boats except that they become very slippery at times tending to launch both the vehicle as well as the boat.

There are also several concrete boat ramps such as at Fishing Base in Garapan and Sugar Dock and one gravel launching ramp at the memorial park site, "Smiling Beach".

The deep lagoon around the commercial port provides a super abundance of moorings. There is also a shallow lagoon, about 10 feet deep, inside the reef near Garapan. Channels through the reef are shallow (6 feet deep) except for the 29 foot ship channel.

Commercial Fishing Port

Commercial fishing could become an important industry in the NMI economy, and policies relating to marine resources are of extreme importance to economic development. The new international agreements on the 200 mile coastal fishing zones will involve the NMI in many ways and must be followed carefully.

The existing berths for commercial fishing vessels at the end of Charlie Dock interfere with traffic, disrupt security, and inadequately serve the fishing industry. Although it is likely that the East Quay will continue as the fishing dock during the Short Range Plan, future possible locations include the rehabilitation of portions of Able Dock or construction of a new facility behind the present Northern Marianas Public Works facilities, south of the existing seaplane ramps. If large scale commercial fisheries prove to be viable, a medium depth dock and shore facilites should be constructed.

Present Maritime Fleet

A list of vessels in service in the Trust Territory of the Pacific Islands (TTPI) during 1976 was provided by the TTPI District Public Works Department (DPWD). the characteristics of these vessels were compiled from the American Bureau of Shipping Record Book, 1977, and are shown on Table 37. The deepest draft vessel, the ENNA G. draws 28.29 feet when fully loaded. All others draw less than 26 feet, and about seven of them draw less than 12 feet. Generally, it is anticipated that the type of vessel serving Saipan and the Mariana

TABLE 37

VESSELS CALLING AT SAIPAN PORT

GOVERNMENT OF THE NORTHERN MARIANA ISLANDS
Marianas Public Works Department
Saipan, Mariana Islands

Data revised in accordance with the American Bureau of Shipping Record Book, 1977.

	VESSEL DATA SHEET			
Name of Vessel	Length (feet)	Breadth (feet)	Depth (feet)	Draft (feet)
Muskingum	338.75	50.00	29.00	1/
Herkimer	321.33	50.00	29.00	23.42
Fentress	321.33	50.00	29.00	23.42
Micronesia Princess	242.75	40.00	21.50	13.83
Ponape Maru	479.00	73.49	1/	25.82
Enna G	456.08	61.04	1/	28.29
Seven Seas	231.30	37.10	17.00	1/
Tjirebon Maru	433.00	60.33	27.60	1/
Coral Princess	477.75	61.00	1/	18.54
Marshall Islands	185.00	33.00	11.00	1/
Kaselehlia	131.23	27.90	11.48	10.10
James Cook	225.67	1/	1/	1/
Truk Islander	111.02	22.31	9.84	8.88
Yap Islander	111.02	22.31	9.84	8.88
Ran Annim	165.00	32.00	14.29	10.04
Militobi	156.00	30.00	13.00	11.05
Tinian II	40.00	12.00	6.00	1/
Olwol	72.36	15.60	7.55	1/
Normar II	122.00	23.00	10.40	9.20
New Field Trip Vessels	185.00	33.00	15.00	11.00

1/ Information not published.

Islands will continue to be of similar class although it is probable that significantly more cargo will be shipped via containers.

Future Maritime Fleet

At least three types of vessels may be involved in the future of the Northern Mariana Islands. The selection of future vessels will be affected by cargo type, passenger markets, cargo tonnage, passenger volume, fuel costs, and the development of new types of vessels. Modernized tugs and barges and self-loading monohull container ships with bow thrusters for maneuvering will continue to be competitive during the short term.

Hovercraft and the high speed hydrofoil, such as the Boeing Jetfoil, have an exotic appeal. These 50 mph vessels stimulate the imagination and provoke thoughts for their use on short runs. A ferry system, such as from Tinian to Saipan is one possible use provided future passenger volumes of 200-300 persons per trip become a reality. These passenger carriers draft only 5 feet with foils up. Sugar Dock pier with minor channel improvements could therefore be used as a terminal. A shorter run and direct delivery of passengers to the population center on Saipan are possible advantages.

However, it is discouraging that experience with these vessels in Hawaii has not proven competitive with regular air service. Hydrofoil fares are actually less for given routes but operations have been conducted at a loss. Sea Flite, as the hydrofoil service is known in Hawaii, has therefore been terminated and the GNMI would do well to seriously evaluate the feasibility of such services before embarking on any commitments.

The stable, semi-submersible platform (SSP) appears to be the most promising of future vessels. A pilot model is presently being tested in Hawaii. A report on the use of the SSP entitled "Hawaii Marine Highway System Study, Review of a Stable Semisubmerged Platform (SSP) Marine Highway System," was made by the State of Hawaii Department of Transportation in 1976. Vessels proposed for use include 500-ton and 3,000-ton displacement SSP's. The 500-ton SSP would have a full load draft of 16.5 feet and a capacity of 150 long tons with an operating range of 600 miles at about 25 mph. Such vessels may prove economical for future inter-island transport in the Marianas.

PORT AND HARBOR DEVELOPMENT PROGRAM

To accommodate projected growth in cargo, and in general to support and stimulate economic activity in the Northern Mariana Islands, a program of port and harbor developments will be implemented during the Plan period. The program should feature major improvements to the commercial port and the development of shore facilities for Saipan. Funding for subsistence and commercial fishing program needs will be provided in large part by government CIP allocations. It is anticipated, however, that U.S. Federal program assistance for port development will also be available, especially for harbor and channel dredging, and breakwater construction. Recreational and tourist oriented boating facilities are proposed to be included in the American Memorial Park.

Future Harbor Development, Federal Cooperation

It is assumed that future harbor planning will be in cooperation with the U.S. Government; therefore, the normal division of responsibilities would conform with proposed legislation and U.S. statutes. Accordingly, the Corps of Engineers would be authorized to plan harbor development, construct and maintain the main channels, basins, and breakwaters for commercial harbors, for fishing harbors including those of subsistence fishing, and recreational harbors. On such projects, the GNMI would be required to contribute about half the construction cost.

The Corps of Engineers' maintenance would include periodic hydrographic surveys to check the harbor depth, etc. (Hydrographic surveys of the harbors in the NMI, except for Rota Harbor were last conducted in 1944. Rota Harbor was surveyed in conjunction with the design of various repairs and improvements necessitated by the devastation of typhoon Pamela.) The U.S. Coast Guard would also be authorized to provide navigational aids on Federal projects. The Defense Mapping Agency, Washington D.C., will update navigation charts as new data becomes available from hydrographic surveys by the Corps of Engineers or others.

Commercial Port

Early in the plan period, it is suggested that funds be made available to do emergency repairs (bullrail and temporary fenders) to Charlie Dock. An engineering analysis of Charlie Dock should also be undertaken to determine its structural integrity.

Although the present planning effort did not provide funds for an extensive analysis of Charlie Dock, preliminary surveys seem to indicate that major reconstruction of Charlie Dock will be necessary. The final configuration of the new port complex would depend upon the findings of the Charlie Dock analysis and subsequent master plan, but in any event would include substantial expansion of dockside storage and working areas. Other features of the port development would probably involve construction or reconstruction of a bulkhead; doubling, reinforcing, and paving of dock surface areas; creation of additional ship berthing space: construction of a break-bulk warehouse; provision of security fencing for the dockside itself. Adequate shoreside facilities for loading and unloading of cargo will also be required.

The long term commercial port facility would then have approximately 304.8 meters (100 feet) of deep berthing, 182.9 meters (600 feet) of medium berthing, 10 acres of container storage, a transit shed to be rebuilt on Charlie Dock for break-bulk cargo, a warehouse, scales, etc. Factors that inhibit the immediate reconstruction of Charlie Dock include:

a. The cost of upgrading Charlie Dock to modern standards approaches costs for construction of a new pier.

b. The construction work to upgrade Charlie Dock would seriously interfere with stevedoring operations.

c. It appears that in the near future two docks will be needed anyway.

It is therefore recommended that only interim repairs to Charlie Dock be made. For example, it is necessary to install a 12' x 12' timber curb for safety purposes. Presently, equipment operators do not use the outer 5 to 10 feet of the pier because of the danger of rolling off the pier.

Baker Wharf

Rather than reconstruct Charlie Dock it is recommended that a new Baker Wharf be the first phase of construction.

Construction of Baker Wharf would add 500 feet of deep water berth (30-35 feet deep) and 300 feet of medium depth berth (15-20 feet deep). Construction activities would include dredging to a 35-foot depth alongside the new wharf. The dredge material could be used as compacted backfill behind Baker Wharf for a container yard and other purposes.

Ultimate development to provide for efficient mechanization of the commercial port, would include an extended pier head line established on a straight line from the northwest corner of Charlie Dock to the south end of the old Army pier. If major transshipment activity is thus developed, container crane tracks and other mechanized equipment and facilities could be installed to serve more than 2000 feet of deep water wharf.

Container Yard

The container yard would require about 5 acres to handle an average of 40 containers per day and 10 day demmurage. The container yard should also be raised on a good foundation and paved with a minimum 4 inches of A.C. on a 12 inch base.

Other requirements include:

a) break-bulk shed
b) security fence
c) control tower
d) flood lights
e) electric outlets for refrigerated containers and
f) truck scales, etc.

Subsequent to the completion of Baker Wharf, Charlie Dock can be renovated, thereby avoiding the discontinuance of service during construction. Estimated cost for the construction of Baker Wharf is given in Table 38.

Charlie Dock Reconstruction

The eventual reconstruction of Charlie Dock would include an envelope of a new concrete-capped, steel sheet pile wall with tie backs and a new fender system. The new wall should be 2 or 3 feet outside the existing block wall. The deck level should be raised to an elevation of 8 feet to minimize overtopping by waves and to provide a suitable backing for the fender system. A new transit shed would have to be constructed.

Reconstruction of Charlie Dock would provide an additional 400 feet of medium depth dock and 550 feet of deep dock, 30 to 35 feet deep. (See estimates Table 39).

In addition, dredging of portions of the Saipan harbor and channel will be required to complement development of the dock and its related facilities. An application requesting Federal Assistance should be filed with the U.S. Corps of Engineers to accomplish this work.

Garapan Wharf

Small-boat fishing facilities are planned for Garapan Wharf. Work would involve dredging to improve the passages in the lagoon and permit better access to the dock, and construction of a launching dock, a building, boat slips, and a secure boat storage area. It is hoped that breakwaters and navigational aids will be constructed with Federal funds.

The buildings at the small-boat center will include:

* A service building for refrigerated storage of fish for ice making and to house equipment for weighing, cleaning and selling fish.

* A second building will contain offices for the government agencies involved in developing the fishing industry, and offices for fishing cooperatives. A classroom/meeting room will be available for training purposes, as well as for co-op meetings.

* Land should also be made available for a secure one or two acre boat repair yard.

Estimated costs of the fishing wharf are indicated on Table 40.

TABLE 38

ESTIMATED COST FOR CONSTRUCTION OF BAKER WHARF

New 500' Baker Wharf (35' depth, 60 returns):	
Sheet Piles & Tie Backs 620' @ $1600 =	$ 992,000
Fenders 500' @ $500 =	250,000
Cleats & Misc. Metal 500' @ $50 =	25,000
Pave Wharf 500' x 60' = 30,000 SF @ $1.35 =	40,000
SUBTOTAL:	$ 1,307,500
New Medium Depth Wharf (East Side):	
Sheets 240' @ $1200 =	280,000
Fenders 300 @ $350 =	105,000
SUBTOTAL:	$ 393,000
Fill for New Wharf & 5 Ac. Container Storage:	
Dredge Fill (-10 to +8) 165,300 c.y. @ $5.00 =	826,500**
Dike on east side 500' @ $200 =	100,000
Dike on north face 450' @ $200 =	90,000
SUBTOTAL:	$ 1,016,500
5 Acre Container Storage:	
Paving & Base 218,000 SF @ $1.35 =	294,300
Fencing 1600 LF @ $15.00 =	24,000
Rock Protection east side 300 LF @ $100 =	30,000
Flood Light	80,000
Electric Underground	25,000
Warehouse	150,000
SUBTOTAL:	$ 603,300
TOTAL SHORT TERM:	$ 3,320,300
ENGINEERING INSPECTION 10%:	332,000
TOTAL:	$ 3,652,300**

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* Utilities, unless specified, are not included

** Assumes dredge fill from Harbor and Channel. Cost for dredging harbor and channel may be borne by the federal government. Should a Corps project not be simultaneous with Dock construction estimated cost for land fill material is approximate 3.000/ cubic yard or 500,000.

TABLE 39

ESTIMATED COSTS FOR RENOVATION OF CHARLIE DOCK

Short Term Improvements
Emergency Repairs for Charlie Dock

Bull Rail and Fenders		$ 50,000
Structural Analysis of Charlie Dock		70,000
	SUBTOTAL:	$ 120,000

Long Term Improvements
Reconstruction of Charlie Dock*:

Sheet Pile & Tie Back 900' @ $1600 =		1,440,000
Fenders 500' @ $500 =		250,000
400' @ $350 =		140,000
Fill - 4' Deep - 100,000 SF - 14,800CY @ $6.00 =		88,800
130,000 SF @ $1.00		130,000
Cleats & Misc. 500LF @ $50 =		25,000
Lights & Power Service		50,000
	SUBTOTAL:	$ 2,123,800
Transit Shed on Dock		160,000
	SUBTOTAL:	$ 2,283,800
Engineering & Inspection 10%		288,200
	TOTAL:	$ 2,512,000*

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* Utilities on Dock not included. Does not include cost of any breakwater or significant harbor dredging.

Attachment # 3B

SAIPAN DOCK & HARBOR FACILITIES

SCOPE OF SERVICES

A. TASK 1 - Preliminary Engineering Services

1. Site Inventory - Provide collection of data pertaining to the area that will be served by the harbor to include tabulation and description of existing facilities and utilities; enviromental studies, local construction capabilities, laws, ordinances and socio-economic data.

   Provide topographic and hydragraphic surveys, soil borings and soil analysis. Complete soil report to include boring, test results foundation, and filling recommendations.

   Provide oceanographic data and recommended design criteria for shoreline structures to include wind, seismic, and wave actions, criteria for fendering, breasting and mooring systems. Definition of approach channel, turning basin and channel lines for projected use by sea/faring vessels for the next 20 years. Provide enviromental studies to include short and long term effects of the project on the enviroment.

2. Forecast of Shipping Demand - Provide a tabulation of projected cargo and passenger traffic activities for a 20 year period. Shipping demand forecasts will be based on, but not limited to, social, environmental, economic and technical factors as assembled under Site Inventory. The planning effort should consider ship characteristics, other planning for the Northern Marianas and the The Trust Territory and the impact of any new East-West/North-South routes from distance sources within a sea/air transportation system.

3. Demand/Capacity Analysis - Provide a basis for determination of the marine mooring structure(s) and facility requirements.

4. Facility Requirement Determination - Based on, but not limited to, data assembled under A1, 2 and 3, establish requirements for dock(s) length, geometric configuration, structual criteria, berthing needs, transit sheds, warehouses, reefer facilities, customs processing, gate house, POL and other supporting facilities and utilities. Prepare a harbor layout plan locating all proposed facilities and utilities consistent with the Coastal Resources Management policies.

5. Site Selection - Evaluate the selected Tanapag Harbor Site on the Northeastern side of Saipan.

6. Enviromental Study - Prepare an enviromental impact assesment of the port construction and operations on the natural enviroment of the area related to the oceanographic investigations. The assesment will reveal the long and short term effects on the biological community of the region, harbor flushing, pollution, siltation and/or sedimentation.

7. Provide for final submittal of Task 1, on bound report containing the master plan, including harbor layout, definitive drawings to include floor plans and sections and cost estimates of all the needed auxiliary facilities. The bound report will also include the results of all studies prepared and reflect all gathered data. Upon acceptance by Public Works, additional 12 copies shall be provided free of charge. Succeeding copies shall be on printing cost basis.

B. TASK 2 - HARBOR DESIGN

Upon acceptance of item A-7 by Public Works, provide the established design criteria from material developed under preliminary services. Provide complete design calculations, working drawings, technical specifications and cost estimates for a basic dock and harbor facility. The basic dock and harbor facility will include the wharf, composed of fendering, breasting and mooring systems, piling and dredging detail, and loading and unloading facilities to include crane or straddle hoist details within the basic dock facility.

C. COMPLETION TIME:

Complete Task I and Task II in accordance with the Scope of Work for seven (7) months, effective upon receipt of the notice to proceed excluding Public Works review time.

Attachment #4

HIGHWAY PROGRAM

CAPABILITY STATEMENT

Agency: Department of the Interior/Territorial and International Affairs

Appropriation: Administration of Territories

Activity: Commonwealth of the Northern Mariana Islands

Proposed Amendment: (i) FY-82 Highway Construction - $3,000,000 appropriation - Total $3,000,000

(ii) Sixteen-Year Highway Program - $48,000,000

Current Program: We have done two sections (1.8 miles) of Beach Road the major road of Saipan with our Federal Highway Reconstruction Program. The FY-81 funds will be used on another section of Beach Road in Garapan. The current level of funding is $532,500, as it has been for the two previous years.

Amount Budgeted FY 1982: In accordance with the Federal-Aid Highway Act of 1978, we should have the same appropriation of $532,500 for FY-82 out of an authorized amount of $1,000,000. We are seeking an appropriation of the total authorized amount plus an additional $2,000,000.

Feasibility: The goal we are attempting to reach through our Highway Program is to upgrade and maintain the road system originally constructed during the Japanese Mandate. The road system improvement is critical to safety, access, and economic development. In Saipan, a well developed road network was established prior to World War II and further improved by the U.S. Naval Administration just after that war. Since then very little was done by the Trust Territory Government to maintain these roads, and most of them were in a deplorable state of disrepair when the new Commonwealth was created. They are no longer adequate for the present traffic, with over 6,000 vehicles today compared with 2,400 in 1971. They have become an impediment to our economic development, in particular tourism.

The Physical Development Master Plan of 1978 identifies 87 miles eligible for Federal-Aid at an estimated cost of $48,000,000. Assuming that the current level of appropriation remains at $532,500, it will take about 90 years to complete the Federal road program. Even if the full authorized amount of $1,000,000 is appropriated, the period is still too long.

Capability: With an appropriation of $1,000,000 per year, we would be able to reconstruct about two miles of highway a year. But we feel that the whole program should be phased over a period of 16 years, and that the level of funding should be increased to at least $3,000,000 a year. Because of its economic impact on the development of the new Commonwealth, this program should be assigned a high priority.

Outlay Effect: The outlay schedule for the $3,000,000 appropriation for FY-82 is as follows:

1st Quarter	2nd Quarter	3rd Quarter
$600,000	$1,500,000	$900,000

Additional Information: We attach a planning document on the Highway Program--Attachment #4A.

HIGHWAY PROGRAM

Attachment #4A

PHYSICAL PLANNING

The Commonwealth of the Northern Mariana Islands as a self-governing political entity of the United States came into being on January 9, 1978.

The Physical Development Master Plan for the Northern Mariana Islands was prepared under the direction of the Office of Transition Studies and Planning for the purpose of conducting the necessary studies to prepare the Northern Mariana Islands for constitutional government.

The 1968 Master Plan developed by the Trust Territory Government provided guidelines for the OTSP, however it was recognized that the plan had been developed with little concern for the cost of financing and implementation of the proposed projects, and a principal objective of the OTSP planning effort became the development of a viable Physical Development Master Plan, which would meet specific funding constraints.

The Physical Development Master Plan for the Northern Mariana Islands translated the policies, objectives and funding targets developed in the Socio-Economic Development Plan into specific capital improvement projects and proposed schedules for improvements. The Capital Improvement Projects (CIPs) proposed in the respective Development Master Plans spanned the period of January 1978 to September 1985. Specific 1977 dollar so as to be in agreement with the SocioEconomic Development Plan.

Although the Capital Improvement Programs were specified only for the 1978 and 1985 period, the plan also took a longer view. Many projects proposed included only initial phases, but with an anticipation of subsequent development in later plan periods.

The OTSP Master Plan for Highway Development and Construction for the 1978-1985 period had been deviated from several times due to 1. late availability of Federal-Aid Highway funding; 2. insufficient staffing at the implementing agency (Public Works); 3. right-of-way problems, exploding traffic volumes and rapid commercial development in areas not anticipated or planned for; and 4. other factors, such as a galloping inflation which rendered plan cost estimates inadequate. Tables 1, 2, and 3 show Plan schedules and cost estimates for Saipan, Tinian and Rota respectively as per the OTSP Plan.

FEDERAL-AID HIGHWAY FUNDING

In 1979, the CNMI became eligible for Federal-Aid Highway funding, and the US Congress authorized an annual apportionment of $1,000,000 of which only $532,500 has been appropriated annually --far short of the OTSP Plan anticipation, as well as of actual needs.

As a result of the problems sighted above the Commonwealth has achieved very little of the planned activities and new direction and revised goals are necessary if minimum transportation needs for healthy economic development are to be met.

HIGHWAY DEVELOPMENT FY 1982-1987 (CIP FUNDING)

The Commonwealth Overall Economic Strategy (OEDS) was developed in 1980. The strategy is an update of the 1977 OTSP Socio-Economic Development Master Plan. The OEDS programs all the CIP expenditures for 1981 through 1987.

The Road Section of the Strategy allots funds in the following manner:

		$ 000's of dollars							
		1981	1982	1983	1984	1985	1986	1987	1981-87
Saipan	Primary	200	200	200	200	200	200	200	1,400
	Secondary		80		80		80		240
Tinian	Primary	---	---	---	---	---	---	---	----
	Secondary	---	---	---	118	148	---	---	266
Rota	Primary	---	---	---	---	---	---	---	----
	Secondary	---	---	---	---	---	---	---	----
Total		200	280	200	398	348	280	200	1,906

Clearly $280,000 per year will not even maintain the Commonwealth's road system. To reconstruct the severely deterioated roads a massive infusion of Federal funds are critical. To compound our problems, the U.S Department of Transportation has proposed amendments to the Federal Highway Act which would repeal the Territorial Highway Program. This would leave us with no Federal highway funds. Without the $532, 500 per year, the situation will then go from bad to worse. Obviously continued and increased Federal aid for our roads is necessary. It will take $3,000,000 per year for sixteen years to bring our transportation network up to proper capacity and safe conditions. This estimate is based in 1981 dollars at a cost of $360,00 per mile.

If DOT's amendments are enacted, we feel that Congress should provide separate amount of funds for Territorial Roads. The islands do not fit many of the difinitions applicable to mainland highways and roads.

IMPLEMENTATION STRATEGY

The Transportation/Highway Planning Office will shortly present a detailed Highway Development and Construction Plan for the FY-82 to FY 87, which will be done as a revision to the OTSP Plan (Table 1, 2, and 3) to make up for time lost and bring the plan more in line with existing conditions and future projections based on traffic and development trends, which have emerged during the past three years and not foreseen or anticipated by the OTSP Plan.

The main thrust of the strategy will be to complete the "Southern Loop" as soon as possible. The southern loop is a concept already conceived by the Trust Territory Government in their 1968 Plan for Saipan. It consists of Wallace Highway --- Airport Road --- As Perdido Road, all three roads constituting Federal-Aid Primary Route CM-F-32 (Plate 3) -- Beach Road (Secondary Route CM-S-300) through the Chalan Kanoa/Susupe and San Jose areas.

The OTSP Plan focused on Wallace Highway (the northernmost leg of the "loop") as being of primary importance since it connects into Airport Road and is in need of reconstruction and widening in order to carry the heavy village, hospital and airport traffic. As is shown in table 1, Wallace Highway was scheduled for construction in 1978. An A/E study was made and serious right-of-way problems encountered and nothing more was done.

To relieve the pressure on Wallace Highway, which will not have its carrying capacity increased soon, it will be necessary to disperse airport bound traffic from Chalan Kanoa/Susupe area to As Perdido Road. The measure will also provide access to the Kobler Field housing area, which is now under development. Our top priority is for the reconstruction of As Perdido Road from its junction with Beach Road to the International Airport. Recent studies have revealed that the ADT on Airport Road is nearly 2,5000 vehicles/day of which 60% originated in the Chalan Kanoa/Susupe area.

Texas Road Bypass (a segment of CM-F-30 between Wallace Highway and As Perdido Road) Was scheduled for construction during FY-80 and 81 in the OTSP Plan and differed due to right-of-way problems, is vital to establishing a viable multi-access circulation pattern throughout the Susupe and Chalan Kanoa area, as well as to furnish direct access from those areas to West Coast Road (CM-F-30). The construction of this road will relieve congestion on Beach Road in the Chalan Kanoa/Susupe area as well as on Beach Road north of the Wallace Highway junction toward Garapan, and establish the West Coast Highway as the island's main artery as was the OTSP Plan intent, and return Beach Road to its original Secondary Road function. For these reasons the Texas Road Bypass will be given Priority I with A/E studies funded for FY-82 as well as the programming of 5% of the FY-82 Highway funding for right-of-way purchase in cases where land exchange is not feasible. Right-of-way acquisition should be completed by end of FY-83 and construction to follow in FY84.

For the rapid completion of the "LOOP" it is necessary that right-of-way acquisition for Wallace Highway be completed soonest and we are proposing R-O-W acquisition to be carried out during FY-82 and FY-83 with construction to follow in FY-84.

To provide capacity and safety of the LOOP, intersection CM-F-32 and CM-F-31, and CM-F-32 and CM-F-30 will be reconstructed during FY-82.

Saipan/Tinian Ferry Terminals are on both sides of the Saipan Channel at its narrowest point (2.8 miles), at Ushi Point on Tinian and Agingan Point on Saipan, and for the purpose of connecting the Saipan and Tinian road networks to enchance economic development on Tinian and make Tinian farm products readily available to markets on Saipan as well as to serve anticipated military needs on Tinian. The acquisition of a ferry is not contemplated since a privately owned ferry is already operating in the Commonwealth.

TABLE 1

Proposed Saipan Highway Improvement Projects -- Short Range Plan

ROAD SEGMENT	Miles	NMI (Federal) Contribution	FY 1978	FY 1979	FY 1980	FY 1981	FY 1982	FY 1983	FY 1984	FY 1985	FY 1978 -
Wallace Road	1.5	270	270	--	--	--	--	--	--	--	900
		(630)	(630)								
Beach Road	1.2	108	108	--	--	--	--	--	--	--	360
		(252)	(252)								
(Oleai-Susupe)	(.2)										
(Chalan-Kanoa, Chalan Piao)	(1.0)										
Texas Road Bypass	2.0	300	--	--	200	100	--	--	--	--	1,000
		(700)			(467)	(233)					
Micro Beach Road	.5	45	--	--	--	45	--	--	--	--	150
Inner Road		(105)				(105)					
(Oleai-Capital Hill Turnoff	5.5	515	--	--	--	256	259	--	--	--	1,707
		(1,192)				(596)	(596)				
New Hospital Road	.3	27	--	--	--	--	27	--	--	--	90
		(63)					(63)				
San Vicente Approach	.5	45	--	--	--	--	--	45	--	--	150
		(105)						(105)			
Kagman Road	1.0	90	--	--	--	--	--	90	--	--	300
		(210)						(210)			
South Island Airport	3.0	300	--	--	--	--	--	--	150	150	1,000
Access Road		(700)							(350)	(350)	
Selected Scenic Roads			--	--	80	--	80	80	240	--	480
Village Roads			200	180	--	--	--	180	360	360	1,280

FY-82 BUDGET BREAKDOWN

FY-82 Anticipated Federal apportionment and authorization	$3,000,000
obligation	$3,000,000

HPR	$ 90,000
PR	60,000
Constr.	2,850,000
Total	$3,000,000

As Perdido Road Reconstruction, 2.4 miles, and drainage improvements	$1,250,000
Texas Road Bypass Reconstruction, 2 miles	
A/E	70,000
R-O-W Acquisition	100,000
Wallace Highway R-O-W Acquisition	200,000
Wallace Highway-East Coast Highway-Airport Road Intersection (CM-F-32 and CM-F-31) Reconstruction	
A/E	10,000
R-O-W	100,000
Construction	125,000
Wallace Highway-West Coast Highway Intersection (CM-F-32 and CM-F-30) Reconstruction	
A/E	15,000
R-O-W	200,000
Construction	150,000
Saipan/Tinian Ferry Terminals	
A/E	50,000
Ferry Terminal Construction	380,000
Ferry Terminal Approach Road Construction (appr. 1500')	75,000
SubTotal Constr.	$2,725,000
Unprogrammed	125,000
Total Constr.	$2,850,000

TABLE 2

FUNDING SCHEME--TINIAN ROADS

YEAR	PROJECT	LOCAL FUNDS	FEDERAL FUNDS*
FY 1979	Village Roads	$ 180,000	
FY 1980	Village Roads	180,000	
FY 1981	Village Roads	180,000	
	Agricultural Access (Rural/Scenic)	80,000	
FY 1982	Village Roads	73,200	
	Harbor Access Road	106,800	$ 249,200*
FY 1983	Agricultural Access	160,000	
FY 1984	Agricultural Access	80,000	
FY 1985	Agricultural Access	80,000	

* Not programmed in the Socio-Economic Plan, but will be pursued for possibly eligible project.

SUMMARY COSTS FOR TINIAN ROAD IMPROVEMENT PROGRAM 1978 - 1985

Road Category	Total Mile	Per Mile Estimate	Total Costs	Federal Funds	Local Funds
Secondary Road	1.26	$ 282,480	$ 356,000	$ 249,200	$ 106,800
Village Streets	3.0	202,620	607,900	**	607,900
Stabilized Surfaces (Unpaved)	3.9	82,500	320,000	**	320,000
All Roads	8.16	-	$1,283,900	$ 249,200	$1,034,700

NOTE:

* To be pursued pending eligibility of project

SUMMARY COSTS FOR ROTA ROAD IMPROVEMENT PROGRAM

ROAD CATEGORY	TOTAL MILES	PER MILE ESTIMATE	TOTAL COSTS
Primary - Rural	10.5	$256,850	$2,696,925
Village Streets	5.8	244,180	1,300,244
Stabilized Surfaces (Unpaved)	49.5	82,500	4,083,750
All Roads	65.8	-	$8,080,919

FUNDING SCHEME

The only road project eligible for federal assistance is the Songsong Village to Airport Road. Of the estimated $200,000 A&E design costs, $75,000 will be derived from local funds in FY 1978.

The funds for construction are phased over the next several years as follows:

Year	Local Funds	Federal Matching Funds
FY 1979	$135,000	$315,000
FY 1980	150,000	350,000
FY 1981	270,000	630,000
Total Construction		

Attachment # 5

ENERGY PROGRAM

CAPABILITY STATEMENT

Agency:	Department of Interior/Territorial and International Affairs
Appropriation:	Administration of the Territories
Activity:	Commonwealth of the Northern Mariana Islands
Proposed Amendment:	Authorization of $800,000

Current Program:

Renewable energy fuel sources are abundant in the Northern Mariana Islands. Unfortunately, our entire power system and back-up is based on fossil fuels imported from foreign countries thousands of miles away. We are seeking to reverse this trend through the exploitation of our natural energy fuels. This process has been started through a strongly supported energy planning and demonstration program derived from several different energy programs. The provisions of 604(a) of P.L. 96-597 are in our best interests and we are most anxious to see this opportunity continued and expanded.

Amount Budgeted FY82: $393,000

Feasibility:

The CNMI has outlined an energy plan to demonstrate the utilization of indigenous resources.

The following is the plan's basic components:

(a) Photovoltaic System for:

- (i) Radio transmitter stations in Saipan and Rota
- (ii) Power generation in Rota and Tinian
- (iii) Power generation for one residential house each in Saipan, Rota, Tinian, Pagan, Agrihan, and Alamagan

The system will include lighting, refrigeration, air conditioning, communications, and battery charging.

(b) Wind Machine for electricity generation at:

- (i) agricultural stations in Saipan, Rota, Tinian and Pagan
- (ii) airports in Saipan, Rota and Tinian
- (iii) one residential house in each of the six inhabited islands

(c) Biomass trials in all islands of:

- (i) fast growing trees (Koa, Hale Koa)
- (ii) root crops (cassava, taro, yam, sweet potato)
- (iii) sugar rich plants (sugarcane, sorghum, beet)

(d) Biogas systems in all islands consisting of:

- (i) digesters to produce biogas as fuel
- (ii) basins and ponds to produce algae and other aquatic life as feed
- (iii) gardens using the treated effluent to irrigate and and fertilize biomass

(e) Ocean Current & Tidal systems in all islands for electricity generation.

Two larger projects the Commonwealth plans to develop are:

(f) Geothermal plant in Pagan

We already have three boreholes drilled to 120 feet, producing hot water at 95°C, giving us a temperature difference of 70 degrees if we use the water (25°C) from a nearby lake for condensation. This is more than adequate to operate a hot water geothermal plant using the thermal energy conversion principle, thus alleviating the need to use a high technology steam geothermal plant in a small island.

(g) Ocean Thermal Energy Conversion

CNMI has responded to a request for proposal of a 10 Megawatt OTEC plant from the Department of Energy. We believe we have an ideal site for a platform mounted OTEC plant on the East coast of Saipan, with the cold water pipe reaching a depth of 2,500 feet at about one mile from the shoreline.

Capability

For all the above components, except Geothermal and OTEC, the CNMI is requesting a total of $800,000 for three years. With this basic funding the CNMI would be able to fully demonstrate the feasibility of these technologies to the public at large. It is believed that once accepted as workable the public will incorporate these technologies in their development schedules, as in many cases decentralization is the answer to the energy problems for isolated villages and farms, and remote islands. The Government will increasingly be able to substitute the dependence on fossil fuels, thus freeing precious capital for other demanding needs. Further the biomass component will greatly benefit our agricultural sector who will grow several "biomass" cash crops per year.

Outlay

For each of these components the CNMI is requesting the following:

(a) Photovoltaic systems
(b) Wind Machines
(c) Biomass Trials
(d) Biogas Digesters integrated with Algae Basins and Gardens
(e) Ocean Current & Tidal Systems

The Geothermal and OTEC projects are dealt with separately.

Additional Information

See attachment 5A.

Attachment 5A

ENERGY PROGRAM

Section 604 (a) of Public Law 96-597 has established an energy policy for the U.S. insular areas based upon their virtually complete dependence on imported sources of energy.

The consequences of our dependence on imported sources of energy are the increasing costs, the uncertain availability and supply of such sources from foreign countries, and the vulnerability of our economy to supply disruptions. Because of our new status as a Commonwealth of the United States, we will increase our demand for energy consumption because of our comprehensive social and economic development programs. So we have to take action to reduce our vulnerability without any delay.

The Commonwealth of the Northern Mariana Islands is endowed with an abundance of renewable sources of energy which can be developed immediately. The appropriate technologies are presently available to develop these resources, and a comprehensive energy plan to meet the energy demands of Commonwealth of the Northern Mariana Islands from these resources should not be difficult to develop.

We have already surveyed our existing sources and uses of energy, and there is no doubt that we can meet all our future energy needs from solar, wind, biomass, biogas, geothermal and ocean thermal energy conservation. We have to demonstrate these renewable energy technologies and determine their cost effectiveness.

We have already outlined an energy plan to meet our needs from our indigenous resources:

(i) Electricity Generation

- (a) OTEC and Wind Machines for Saipan, Rota and Tinian
- (b) Geothermal for Pagan
- (c) Biogas and wood burning generators for isolated villages and farms and smaller islands

(ii) Vehicles and Stationary Engines

- (a) Electric Buses for mass transit
- (b) Pure ethanol for cars and trucks
- (c) 80% Ethanol and 20% coconut or other vegetable oil for diesel-powered equipment and boats

(iii) Farm Equipment

- (a) Biogas for stationary equipment
- (b) Ethanol for mobile equipment
- (c) Photovoltaic for domestic purposes

(iv) Commercial & Domestic Premises

- (a) Solar water heaters
- (b) Photovoltaic lighting and refrigeration (including charging of batteries for night use)
- (c) Ethanol for cooking

(v) Communications

- (a) Wind for charging batteries
- (b) Photovoltaic for isolated transmitter stations

At the present time we need the following demonstration projects to enable us to study the performance and economics of these new technologies:

(a) Photovoltaic Systems for:

- (i) radio transmitter stations in Saipan and Rota ($90,000 and $110,000)
- (ii) airports in Rota and Tinian (2 @ $15,000)
- (iii) one residential house each in Saipan, Rota, Tinian, Pagan, Agrihan and Alamagan (6 @ $5,000)

The system will include lighting, refrigeration, air conditioning, communications, and/or battery charging.

(b) Wind Machines for electricity generation at:

- (i) agricultural stations in Saipan, Rota, Tinian and Pagan (4 @ $30,000)
- (ii) airports in Saipan, Rota and Tinian (3 @ $50,000)
- (iii) one residential house in each of the six inhabited islands (6 @ $20,000)

(c) Biomass Trials in all islands of:

- (i) fast growing trees (Koa, Hale Koa) (6 @ $2,000)
- (ii) root crops (cassava, taro, yam, sweet potato) (6 @ $2,000)
- (iii) sugar rich plants (sugarcane, sorghum, beet) (6 @ $2,000)

(d) Biogas Systems in all islands consisting of:

- (i) digesters to produce biogas as fuel (6 @ $5,000)
- (ii) basins and ponds to produce algae and other aquatic life as animal feed (6 @ $5,000)
- (iii) gardens using the treated effluent to irrigate and fertilize biomass (6 @ $5,000)

(e) Ocean Current & Tidal Systems for electricity generation in all the inhabited islands (6 @ $3,000)

Two larger scale projects the Commonwealth plans to develop are:

(f) Geothermal Plant in Pagan

We already have 3 boreholes drilled to 120 feet, producing hot water at 95°C. If we use the water at 25°C from a nearby lake for condensation purposes, we have a temperature difference of 70°C which is more than enough to operate a hot-water geothermal plant presently available in Japan. We do not want to use the high technology steam geothermal plant in a small island.

(g) Ocean Thermal Energy Conversion (OTEC)

CNMI has responded to a request for proposal of a 10 Megawatt OTEC plant from the U.S. Department of Energy. We believe we have an ideal site for a platform-mounted OTEC plant at a very short distance from the East coast of Saipan, with the cold water pipe reaching a depth of 2,500 feet at about one mile from the shoreline (see attachment A1).

Conclusion

Section 604 (a) of P.L. 96-597 can be the most important piece of legislation ever passed for the U.S. insular areas, as it deals exclusively with our unique problems. This approach will enable us to solve our energy problems and develop our indigenous energy sources without reference to the National Energy Plan which only considers the problems and needs of the mainland states which are completely different from ours.

See Table I for FUNDING

Table I

FUNDING

		1982	1983	1984
(a) Photovoltaic	(i)	200,000		
	(ii)	15,000	15,000	
	(iii)	10,000	10,000	10,000
(b) Wind Machine	(i)	30,000	30,000	60,000
	(ii)	50,000	50,000	50,000
	(iii)	40,000	40,000	40,000
(c) Biomass	(i)	4,000	4,000	4,000
	(ii)	4,000	4,000	4,000
	(iii)	4,000	4,000	4,000
(d) Biogas	(i)	10,000	10,000	10,000
	(ii)	10,000	10,000	10,000
	(iii)	10,000	10,000	10,000
(3) Tidal	(i)	6,000	6,000	6,000
Total		393,000	193,000	208,000
Grand Total		$ 794,000, Say	$ 800,000	

Attachment A 1

SUMMARY OF CNMI OTEC PROPOSAL

The Commonwealth of the Northern Mariana Islands (CNMI) has submitted a proposal for a 10 MWeplatform mounted Ocean Thermal Energy Conversion (OTEC) Plant to the Department of Energy (DOE). The proposal has been made in response to a DOE solicitation.

The OTEC method of producing power is based on a technique nearly 100 years old. Warm surface water is pumped through evaporators, vaporizing a working fluid such as ammonia or freon. The vapor then powers a turbine generator, passes into a condensor and is cooled by near freezing water that is pumped from the deep ocean. The liquified ammonia is then returned to the evaporator beginning the closed loop cycle again. OTEC functions when the warm and cold water differ in temperature of at least 40° F.

The CNMI assembled a team of experts to prepare the proposal at no cost to the government. The team members are Science Applications, Inc., (SAI); Global Marine Development, Inc., (GMDI); Alfa Laval; Mechanical Technology, Inc., (MTI); Hawaiian Dredging and Construction, Co., (HDC); Burns and Roe; Nossaman, Kreuger, and Marsh; Basic Resources, Inc., and Bank of America. SAI is the team leader.

The 600+ page proposal was written to seek a $900,000 phase I contract from DOE. Phase I is the 12 month technical, environmental, and financial feasibility phase of a six-phase program.

DOE will award six Phase I contracts. Later, they plan to award two contracts leading to the testing of the design, construction of the facility, testing of the facility and the operations of the facility. If the CNMI were awarded a contract for the constructions phases, the facility could be expected to be constructed in the 1986-87 time period. The proposal estimates that the facility construction would cost around $120 million 1980 dollars. Since DOE's main objective in the project is for OTEC commercialization, the proposal estimates that the tenth facility of the same design would cost $95 million 1980 dollars, The reduction is due to learning and production technique savings.

The CNMI is competing for this contract with Hawaii, Florida, Puerto Rico, the Virgin Islands, Maryland and Alaska. There are as many as nine separate proposals. There are two factors which make the CNMI proposal unique. The first unique factor is the platform barge plant design, fifty feet from shore with a cold water pipe anchored to the bottom of the ocean. The other proposals are barges, anchored at sea with a pipe running vertically until it reaches sufficiently cold water.

The engineering involved with this type is much more complicated and risky. The second unique aspect of the proposal is its size. The ten megawatt size was chosen because most of the technology is available and near term commercial market is for 10 MWe OTEC facilities for the Pacific Islands. The price paid for electricity by these islands will be at a level in 1987 that OTEC generated power will be as cheap or even cheaper than conventional power. This commercial feasibility is not the case with the other proposals which are all of the 40 megawatt size. An additional factor making this proposal unique is that the government is the owner and operator of the power plant rather than a private utility. This is also the case with the other Pacific Islands territories and nations.

The proposal details the technical, environmental, and financial feasibility studies that will be done during the twelve month period. The proposed facility site is tenatively located at Puntan Hagman on Lau Lau Bay. This site provides an ideal location because of the proximity to deep ocean cold water. Approximately one mile of pipe, 15 feet in diameter, will be anchored to trestles built on the ocean floor.

The power plant portion of the proposed facility will operate on a closed system using ammonia as the fluid which is then evaporated and condensed by the warm and cold water respectively to turn the turbines to run the generators. The mixed water discharge will then be directed away from the culture uses. The deep cold water is extremely high in nutrients and provides an excellent opportunity for a mariculture operation which could offset the costs of the operation and maintenance of the OTEC plant.

Although the bulk of the facility proposed would be built with DOE funds, DOE requires that the applicant share in a certain percentage of the costs. This amount is not fixed. In our proposal the CNMI proposes to assume most of its staff costs in phase I, the value of the land where the facility will be located, the correction to the island power system to transmit the electricity generated, and to pay back the sale of the plant's electricity after the plant is on line.

The proposal already has the support of the Government of American Samoa. Additional support is being solicited from Congress and the other islands of the Pacific. The additional interest and support will inform DOE that the need and interest currently exists for developing the commercial application of this technology in the tropical islands of the Pacific.

In the proposal, there is estimated to be a market for 50 to 70, 5 to 10 megawatt OTEC Plants.

The DOE will announce the winners of the six contracts by June or July, 1981. So far the program has escaped President Reagan's budget axe. It would be foolhardy for the President to cut a program which could replace the current Federal financial aid given to the Pacific Islands to purchase foreign oil with domestically available technology.

Attachment #6

WATER RESOURCES DEVELOPMENT

CAPABILITY STATEMENT:

Agency/Bureau:	Department of the Interior/Territorial and International Affairs
Appropriation:	Administration of Territories
Activity:	Commonwealth of the Northern Mariana Islands
Proposed Amendment:	(i) FY'82 Water Resources Development Appropriations - $1,691,000. (ii) Proposed projected costs for Water Resource Development 1983-87 - $10,000,000.
Current Program:	Current practice is to attempt to meet all existing demands on an outdated and inefficient water supply system. We are minimally fulfilling our basic water needs under the present funding level. The present funding level allows for the mere maintenance of the status quo i.e. minimum deliveries, water hours, substandard water quality, etc. Little if any real development of water resources is occuring at this time.
Amount Budgeted FY 1982:	Present proposal of $1,691,000 which will allow for minimally meeting existing water demands, instigating a water resource development plan and exploratory drilling program.
Feasibility:	On an island with limited resources, the availability of water is the single most important feature in development. The CNMI has inherited an outdated and highly inefficient domestic water supply system and is trying to do its best under the circumstances. The proposed budgeting will allow for establishing a development plan and exploratory drilling program in 1982 along with the necessary funding for maintaining the existing deliveries. Subsequent activities from 1983-87 include an expanded source development program along with major overhaul of the existing delivery system. (See Table 1).

Any development of the CNMI is directly related to the development of the water resources on these islands. Therefore, water resources funding is considered of high priority within the entire budget. This is true for FY 1982 and will continue to be for quite some time.

Capability: (i) Under 1982 funding -- the maintenance of minimum deliveries; the establishment of a development plan; an island-wide exploratory assessment drilling program.

(ii) 1983-87 Program -- development of new sources; physical extension, expansion or revision of existing distrubution system; implementation of user water conservation plans and public awareness programs.

Outlay Effect: (i) $1,691,000

(ii)	1983	$2,500,000
	1984	2,000,000
	1985	1,500,000
	1986	1,500,000
	1987	2,500,000

Additional Information:

Please see Attachment #6A.

Attachment # 6A

WATER RESOURCES PLANNING

The Need for Program Assistance in the CNMI

Public Law 89-80, as amended, entitled the Water Resources Planning Act, provided financial assistance to States for comprehensive planning of water and related land resources through its Title III program. This program was instigated in the Commonwealth of the Northern Marianas in FY 1980. For the first time the Commonwealth would have had the opportunity to comprehensively plan and provide meaningful direction to the water development on the islands of the Commonwealth. If the proposed cutbacks to the Title III program are effected, the adverse impact to the CNMI's Water Resources Planning Office would be devastating.

The population of the Commonwealth of the Northern Marianas is becoming ever more dependent on a domestic water supply system for their everyday needs. Unfortunately the demand for domestic water has now exceeded the present supply rate. This problem is presently manifested in forced conservation through the implementation of water hours and the delivery of poor grade water to the public.

Short range solutions to long range problems have compounded the original problem. The implementation of water hours has not only inconvenienced the population but has hastened the deterioration of an already outdated delivery system. The attempts to meet the quantity demand of water has resulted in the over-pumpage of basal waters resulting in the production of waters of lesser quality. Without a meaningful and comprehensive planning approach to the present water problems, the Commonwealth is not likely to be able to meet the ever increasing demands of a growing system.

Up until the initiation of the CNMI's Water Resources Planning Office in FY 1980, the mode of the development of water resources activities in attempting to meet the ever increasing demands has been crisis oriented. The under-staffed and under-trained water technicians would often give Herculean efforts in meeting immediate demands as evidenced in post-typhoon situations. But the underlying problems in most cases would go unattended. Merely meeting the immediate demands of crises will not necessary satisfy the needs of a growing system. At best it can only delay confrontation with real problems.

It is with the intent to confront the underlying problems related to the increasing demands on water resources within the Marianas that the Physical Planning Office applied for funding and was granted its initial funding assistance in FY 1980. As a result c this grant, a water data monitoring network was established that provided the basic hydrological information necessary for any meaningful water management decision making. A contract was let to collect and analyze all the existing historical hydrological data concerning the islands of the Commonwealth. An investigative test hole drilling program was instigated for the first time to define a major aquifer for its physical properties including, water level flunctuations, chemical constituents, ground water flow analysis, drawndown effects, etc.. These specific projects were instigated in the initial grant period along with the other activities necessar to establish a Water Resources Planning Office structure, i.e. field and office equipment, training technicians, supplies, etc.. The foundations for a planning office have finally been established. To jeopardize these efforts because of funding cuts would mean reverting back to a crisis oriented water resources program which we already know, cannot meet the demands of our growing population and industries.

The following is a description of various scenarios under hypothentical funding cuts:

1. Presently proposed funding cuts (minimal 1981 FY with no 1982 FY funds) - would result in a terrific waste of two years (1980 1981 FY) effort in establishing a viable planning office. Two years of completed basic data and preliminary analysis of existing aquifers would be wasted. On top of that, a fair amount of equipment, supplies and training could not be fully utilized in a very much needed area. There would also be a direct staffing impact on five people.

2. Minimal funding ($50,000 - $75,000) - a maintenance program to carry on basic data monitoring with little if any expansi in program activities. This program would at least supply future efforts in comprehensive planning activities the necessary information to function efficiently. This maintenance program would not met the needs of the increasing demands on the existing water supply system and would eventually become inadequate by attrition. Direct staffing impact of two people.

3. Fully funded ($100,000 - $150,000) - would allow for a truely functional planning office. Long and short ranged planning activities could be coordinated with the present supply demands and hopefully meet future water resources demands. Contractual servi would be possible in areas of limited local expertise. Coordinatio efforts could be maintained, conservation programs could be effecte public education and outreach efforts would be possible. All of these elements necessary for a viable Planning Office would at leas be a possibility under this level funding.

The CNMI has a mandate at this time. The Commonwealth must make the decision to truely establish a meaningful and viable Water Resources Planning Office or continue to face the losing battle of trying to make their water supply ends meet. There is no question that water is the central figure in any growth situation that these islands hope to maintain. Hopefully a reasonable and intelligent decision can be arrived at in time to fulfill the original dreams and meet the basic needs of the people of the Commonwealth.

Attachment: Saipan Water System Proposed Improvements (1978-1985)

TABLE 1

SAIPAN WATER SYSTEM PROPOSED IMPROVEMENTS 1978-1985*

1.	Complete water metering program of all homes and commercial businesses	Lump Sum	$ 50,000
2.	Complete planned improvements to the water distribution system as recommended in previous studies and/or under design		
	a. North and South Garapan distribution system	Lump Sum	$800,000
	b. San Roque distribution system	Lump Sum	$200,000
	c. Tanapag distribution system	Lump Sum	$400,000
	d. Sugar King Subdivision I & II distribution System	Lump Sum	$200,000
	e. Gualo Rai Reservoir and distribution system	Lump Sum	$500,000
	f. Chalan Kiya distribution system	Lump Sum	$100,000
	g. Afetna distribution system	Lump Sum	$300,000
	h. Fina-Sisu and Chalan Kanoa distribution system	Lump Sum	$100,000
	i. Tanapag pump	Lump Sum	$ 40,000
	j. Airport Apron Water Catchment system	Lump Sum	$100,000
3.	Initiate inventory and data base program that will allow systematic analysis of behavior of the water sources over time		
4.	Additional wells at Isley Field Kobler Field area	2 wells @$40,000	$ 80,000
5.	New well field at Rapugau	3 wells @$40,000	$120,000
6.	Conduct exploratory drilling program between Agag and San Vicente	Lump Sum	$200,000
7.	Improve Agag well field	Lump Sum	$100,000
8.	New well field in Chacha district	4 wells @$40,000	$160,000
9.	Eight-inch transmission main between Chacha well field, Agag wells, and San Vicente area	22,500 @$30/lf	$ 675,000
10.	Transmission main, reservoir, and distribution system for San Antonio Newtown	Lump Sum	$1,500,000
11.	Transmission main and distribution system for new areas in Garapan	Lump Sum	$ 300,000
12.	Transmission main, booster pumps and reservoir for San Roque	Lump Sum	$ 700,000
13.	Transmission main and distribution system for new areas in San Jose-Oleai-Susupe areas	Lump Sum	$ 400,000
14.	Additional distribution system, improvements and replacement of existing pipes for existing villages (San Antonio, Chalan Kanoa, Susupe, Oleai, Garapan, Tanapag, San Roque, and San Vicente)	Lump Sum	$1,500,000
15.	Transmission main and distribution system for new areas in Tanapag	Lump Sum	$ 500,000
16.	Replace and upgrade existing transmission mains that are old or in deteriorated condition.		
	a. Transmission main along primary road in vicinity of San Vicente	Lump Sum	$ 150,000
	b. Transmission main from hospital well #3 to Isley field-Kobler field area	Lump Sum	$ 400,000
	c. Transmission main in Chalan Kanoa	Lump Sum	$ 150,000
		TOTAL	$9,725,000

* Proposed improvements are not yet prioritized.

Attachment #7

AMERICAN MEMORIAL PARK

CAPABILTIY STATEMENT

Agency/Bureau: Department of Interior/Territorial and International Affairs

Appropriation: Administration of Territories

Activity: Commonwealth of the Northern Mariana Islands

Proposed Amendment: 2,725,000. for Development of American Memorial Park.

Current Program: Public Law 95-348 authorizes an appropriation not to exceed $3.0 million for the development of the American Memorial Park. The park encompasses about 135 acres if prime coastal area immediately adjacent to the major hotel district and the major harbor facilities on Saipan. It is a memorial for the American soldiers and civilians who had given up their lives in the Northern Mariana Islands during the World War II. In addition, the park would serve as a major attraction to tourists and residents for recreation and sport activities. The National Park Service has been authorized to plan, develop and administer the park. The park, as proposed in the Physical Development Master Plan for Saipan, provides for a phased development The first phase is estimated to cost $3.0 million. However, the total cost for the completion of the park as prepared in the plans is estimated to be $16.0 million. The park is to includes interpretive center, boat ramps, athletic fields, swimming pool, amphitheater, and picnic facilities. Thus the intire park area will function as a livin memorial.

A Task Force has been established to work with the National Park Service to prioritize the park development, so that it may proceed toward its final development in an orderly and authorized manner. The Task Force has made the following park development recommendations with the associated cost per development:

1. Site preparation - roads, parking, clearing, walkways.	$463,900
2. Interpretive Center	859,350
3. Nature Area - Walkways an signing	27,880
4. General Park Improvements -Signs, Dredging, Removal of Navigational Hazards.	984,500
Total	2,335,630
Mobilization 0.3%	7,066
Distance Factor 6%	140,138
	2,475,768
Inflation 1980 & 1981 20%	495,154
Total Cost	2,970,921

* Source: American Memorial Park, Plan C Estimates; December, 1979; by Art Dreyer, National Park Service.

These initial Park developments come to about $3,000,000.

No work has began on this project pending appropriation of funds.

No work can be accomplished until funds are appropriated.

Feasibility: A $3 million authorization already exists. The Appropriation of the $2.725 million would help the Commonwealth realize the promise made by Congress when it ratified the covenant. The project represents an execution of formal part of our relationship to the United States.

Capability: All funding requested for American Memorial Park would be used for construction of the six top priority park facilities. All facilities will be constructed in accordance with the National Park Service Plan for Park Development.
(Attached).

Although it is estimated that the entire Park Development Plan will cost $16 million dollars, development will be phased. Additional funds for future phases are not requested at this time.

Outlay Effect:	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr
FY 1982	0.25	0.25	2.0	0.5

See Attachment 7A and 7B for additional information.

Attachment 7A

AMERICAN MEMORIAL PARK - SAIPAN
Cost Estimate Plan "C" - 12/79 Art Dreyer, Landscape Architect,
National Park Service.

Item No.	Item Description	Unit	No.of Units	Unit Cost	Total Cost
I	Micro Beach Area				
A	Roads and Parking (278 Cars)				
1.	Clearing and Grubbing	Acre	2.5	950.00	2,400
2.	Grading	Sq.Yd.	11950	1.60	19,120
3.	Compacted Base (6"Depth)	Cu.Yd.	1990	11.50	22,900
B	Beach Area				
1.	Clearing and Grubbing & Cleanup of 200"x2800"	Acre	13.0	950.00	12,350
C	Picnic Area & Playfield				
1.	Clearing & Grubbing playfield	Acre	5.25	950.00	5,000
2.	Grading Playfield	Sq.Yd.	25410	1.60	40,650
3.	Turf Instalation Playfield	1000S.F.	26	100.00	2,600
4.	Group Picnic Cabana	Sq.Ft.	3600	20.00	72,000
5.	Group Picnic Units	Each	2	5,000.00	10,000
6.	Picnic Units (Table and Grills)	Each	50	500.00	25,000
7.	Walks (surfaced 5' wide)	Sq.Ft.	12,300	1.00	12,300
8.	Restrooms	Each	3	12,000.00	26,000
9.	Waterlines	Lin.Ft.	3770	24.00	90,480
10.	Sewerlines	Lin.Ft.	3770	20.00	75,400
11.	Powerlines (underground)	Lin.Ft	3770	10.00	37,700
		SUBTOTAL ITEM I			463,900
II	Interpretive Center and Memorial				
A	Roads and Parking (510)				
1.	Clearing and Grubbing	Acre	4	950.00	3,300
2.	Grading	Sq.Yd.	18675	1.60	29,880
3.	Compacted Base (6" Depth)	Cu.Yd.	3100	11.30	35,650

Item No.	Item Description	Unit	No.of Units	Unit Cost	Total Cost
B	Site Facilities				
1.	Boat Launching Ramp	Lane	1	15,000	15,000
2.	Boat Concession Bldg.	Sq.Ft.	2000	35.00	70,000
3.	Boat Dock and Wharf	Sq.Ft.	600	80.00	43,000
4.	Mooring	Each	15	2000	30,000
5.	Memorial Terrace	Sq.Ft.	3000	6.20	30,000
6.	Bench Seat	Lin.Ft.	30	66.00	1,980
7.	Clearing and Grubbing-Turf Area	Acre	2.5	750.00	2,400
8.	Grading - Turf Area	Sq.Yd.	11955	1.60	19,125
9.	Turf Installation-Turf Area	1000S.F.	107	100.00	10,700
10.	Walks (Unsurfaced 5' wide)	Sq.Ft.	25420	1.00	25,420
11.	Interpretive Center Bldg. -1	Sq.Ft.	5400	40.00	218,000
12.	Interpretive Center Bldg.-2	Sq.Ft.	5000	40.00	200,000
13	Water Lines	Lin.Ft.	2460	24.00	59,000
14.	Sewerlines	Lin.Ft.	2460	20.00	48,200
15.	Powerline (underground)	Lin.Ft.	2460	10.00	24,600
	SUBTOTAL OF ITEM II				859,300
III	Natural Area				
A.	Walks (unsurfaced 5' wide)	Sq.Ft.	27880	1.00	27,880
	SUBTOTAL OF ITEM III				27,880
IV	General Park Area				
A.	Signing-Entrance and Directional		Lump Sum		10,000
B.	Dredging -3400 Ft.x 150 Ft. x 5Ft.	Cu.Yd.	175,000	5.50	962,500
C.	Removal and Disposal of Hazardous Material 4600 meter x 60 meter shoreline	Ha.	20	400.00	12,000
	SUBTOTAL OF ITEM IV				984,500
	TOTAL				2,335,630
	Add-ons				
	0.3%Mobilization & Demobilization				7,066
	6% Area Factor for Saipan				140,138
	1980 & 1981 Inflation 20%				495,154
	GRAND TOTAL				2,970,921

Attachment 7B

AMERICAN MEMORIAL PARK

Public Law 95-348 authorizes an appropriation not to exceed $3.0 million for the development of the American Memorial Park. The park encompasses about 135 acres of prime coastal area immediately adjacent to the major hotel and the major harbor facilties on Saipan. As a memorial for the American soldiers and civilians who had given up their lives in the Northern Mariana Islands during the World War II. In addition, the park would serve as a major attraction to tourists and residents for recreation and sport activities. With the assistance of the National Park Service(NPS) of the Department of Interior, preparatory efforts are being made accumulating historical information and documents depicting the war activities in the Northern Marianas during World War II. A monument has been scheduled for siting sometime in 1980. A park ranger for the National Park Service will be assigned to Saipan sometime this year to assist in the preparation work. Endangered species, known to live in a wetland portion of the park, would be protected within the nature study area.

The architectural renditions of the park are shown in the physical development master plan for Saipan. The park is to include a history center, boat lauching facilities, nature study area, athletic fields, swimming pool, amphitheater, and picnic facilties.

Congress has authorized $3.0 million for construction of facitlites which will be made available through the National Park Service which has been authorized to plan, develop and administer the park. A NPS park ranger will be stationed on Saipan beginning this month.

The park, as proposed in the Physical Development Master Plan for Saipan, provides for a phase development. The first phase is estimated to cost roughly $3.0 million. However, the total cost for the completion of the park as prepared in the plan was estimated to be roughly $16.0 million. Due to obvious funding constraints and in recognition of great desire to proceed with the park development, Governor Carlos S. Camacho has created a special American Memorial Park Task Force to work with the National Park Service in prioritizing the park development so that the project, if funded, may proceed in manner which will allow the total park concept to be realized over several years.

The Task Force has recommended that this initial park development involve the following:

1. Site clearing, grading and landscaping
2. Erection of the memorial monument
3. Construction of sanitation facilities
4. Removal of water navigational hazards and reconstruction of eroded facilities
5. Construction of a covered, open air, multi-purpose theater
6. Construction of an activity center for the aged and youth.

These improvements would provide for a memorial of the war victims; an aesthetically pleasing open space theater which can be used for passive and active recreational activities and sports for tourists and residents, minimal sanitary facilities and removal of boat hazards. An appropriation of $3.0 million for the park as authorized by P. L. 95-348 would allow the National Park Service in conjuction with Commonwealth Government to undertake the above efforts.

The government and people of the Northern Mariana Islands are increasingly concerned about the American Memorial Park. The park land has been minimally developed because of the pressing needs for available capital elsewhere. The rampant inflation will push the costs of the development higher if appropriation for the project is not made soon.

Governor Camacho in his opening remarks to the American Park Task Force, had this to say: "While we have strong desire to see the park completed in a hurry, let's be reaslistic. We know it will cost $16.0 million to complete the park, but we shouldn't wait until we have $16.0 million. We should start now, utilizing any funds that we could raise locally and seeks any financial support from without so that our people and our island visitors could begin to use the park area."

STATEMENT OF JOSEPH S. INOS, STATE SENATOR, NORTHERN MARIANAS COMMONWEALTH LEGISLATURE

I bring greetings and extend a warm Hafa Adai from the people of the Northern Mariana Islands. The members of the Senate of the Second Northern Marianas Commonwealth Legislature support the budget request of $26,489,000 (supplemental inclusive) for the Commonwealth of the Northern Mariana Islands for Fiscal Year 1982 and urge that this committee act favorably on this request. We realize that the Fiscal Year 1982 budget will be very tight and therefore, our additional request is limited to the most pressing needs of the Commonwealth. The demand for public service and the numerous capital improvement program requirements, such as construction of badly needed roads, harbors, health facility, electrical generation and others for the Commonwealth far exceeds the Covenant grants received from the United States and the resources we generate within the Commonwealth. The cost of fuel has doubled since the inception of our three-year-old government and implicit price deflator has only gone up 29%.

Public Law 96-205 contains an authorization for an appropriation of $24.4 million for the construction of health facilities for the Commonwealth of the Northern Marianas to be located on Saipan. We respectfully request that you support the appropriation of this amount this Fiscal Year.

During the Fiscal Year 1979, Congress passed Public Law 95-348 authorizing a $9 million for the construction of a Power Plant on Saipan. $5 million of this authorization was appropriated and the power plant is now completed and is in operation. Immediate expansion is necessary in order to meet the increasing demands of the tourist industry and the residents of the Northern Marianas in general. Accordingly, we solicit your support in appropriating the balance of $4 million under this authorization in order that this necessary expansion may commence.

Sections 802 and 803 of the Covenant to Establish a Commonwealth of the Northern Mariana Islands in Political Union with the United States of America stipulate that the Commonwealth will make available to the Government of the United States, for lease, 17,799 acres on Tinian, 177 acres at Tanapag harbor and 206 acres encompassing the entire island of Farallon de Mendinilla for a period of 50 years.

In addition, the United States was given an option to extend the lease for an additional 50 years at no cost. The sum of $19.5 million (1975 constant dollars) was the figure agreed upon by the people of the Northern Mariana Islands and the people of the United States. We support the request of the Defense Department that the lease option be exercised this fiscal year.

Fifty percent of the payment due, pursuant to Title I of the Micronesian Claims Act of 1979 have not been appropriated. As you know, these claims have been adjudicated by the War Claims Commission and we, again, respectfully request that this committee look into this matter as our people are patiently waiting payment.

The Federal Highway Act under Public Law 95-599 authorized $1 million to be appropriated to the Commonwealth of the Northern Mariana Islands annually. The Commonwealth have been receiving only 50 percent of this amount. Because of our extensive need to begin highway construction in Rota and reconstruction on Saipan and Tinian, we ask that the entire amount be made available to the Commonwealth this fiscal year.

Public Law 95-348 authorized to be appropriated the sum of $3 million for the development maintenance and administration of the American Memorial Park at the Tanapag harbor reservation on Saipan. We ask that this amount be appropriated in order that the project will get underway.

The harbor facilities in the Commonwealth are not only substandard but are indeed dangerous. Public Law 96-597 mandated that a study be made as to the needs of the harbor facilities for the Commonwealth. The Department of Interior contracted the Army Corps of Engineers to complete the evaluation of the Saipan and Rota harbor needs. We support any appropriation for the improvement and construction of the harbors and dock facilities for the islands of Saipan, Rota, and Tinian.

Mr. Chairman and members of this committee, on behalf of the Senate of the Commonwealth of the Northern Mariana Islands, I respectfully request that you act favorably on these requests which are urgently needed by the people of the Commonwealth.

I wish to thank this committee and the Congress of the United States for its continuing generosity and understanding support of our young and developing Commonwealth.

Thank you very much for the opportunity to appear before your committee. I will be most happy to answer questions that the members of this committee may have.

POWER GENERATION FACILITIES

Senator JOHNSTON. Thank you very much, Mr. Pangelinan. I might say we're very proud of the job that you're doing in the Northern Marianas. We were there at the beginning, of course, in this committee. We take special pride in the progress you've made in the Northern Marianas. So my congratulations to you and the Legislature and the Governor for having done a good job getting things started there.

Are you satisfied that the fiscal year 1982 request of $23.9 million will meet the needs of the Northern Marianas?

Mr. PANGELINAN. Mr. Chairman, we have indicated in our testimony that this is the minimum need of the Commonwealth for the various activities of the government. There are other needs that we have identified in our testimony, especially in the area of power development, additional road funding, and other opportunities that we feel are needed to improve the infrastructure of the Northern Marianas. We hope the Senate will seriously consider those other requests.

Senator JOHNSTON. What is the condition of your power generation facilities?

Mr. PANGELINAN. Very fortunately, Mr. Chairman, through the generosity of this Congress we have put in place a new powerplant. I would like to ask my Director of Public Works to elaborate on the condition of that. Pete?

Mr. SASAMOTO. The new powerplant was put into service last year in May. We have been able to operate at a savings of more than 150 barrels per day, compared to previously. Unfortunately, this savings was offset by the increase in the cost of fuel. We have a total capacity of 31 megawatts, and we're looking forward to getting another engine.

Senator JOHNSTON. So you don't have problems with power outages now?

Mr. SASAMOTO. No, sir.

PAGAN VOLCANO ERUPTION

Senator JOHNSTON. We're glad to hear that. What is the situation on Pagan?

Mr. PANGELINAN. There were 54 people evacuated from Pagan. There was no loss of life. We have extensive damage from the volcanic ash. This morning I noted to the committee that we evaluating the condition there. We have assistance from the National Geologic Survey. A team is there to monitor the tremors of the volcanic activities. We hope by this week we'll have more information. We have evacuated all the people. The government has placed a restriction on travel to Pagan because of the potential danger to life.

Senator JOHNSTON. Have the dimensions of the islands changed any?

Mr. PANGELINAN. It adds more terrain to the island because of the volcanic flow.

Senator JOHNSTON. How much more?

Mr. PANGELINAN. Very limited. It's vertically rather than horizontally.

Senator JOHNSTON. How much vertically?

Mr. PANGELINAN. Twenty-five feet of volcanic ash in part on the base of the volcano.

Senator JOHNSTON. What's the highest point on Pagan?

Mr. PANGELINAN. The highest point is about 1,500 feet. It blew its top very similarly to the Mount St. Helens experience.

TINIAN DEFENSE OPTION

Senator JOHNSTON. What is the status of the defense option on Tinian?

Mr. PANGELINAN. We understand, Mr. Chairman, that the Department of Defense has finally decided to exercise its option, the sum of $32 million has been included in the Department's budget for the exercise of the option.

Senator JOHNSTON. What is that going to do to the cattle operation there?

Mr. PANGELINAN. The cattle operation will continue on until such times as infrastructures are to be in place in the island. At the present time the function is basically to exercise the option. We do not know what the military's plan is about developing the island for the military posture, but the operation there will be in a gradual step, and we believe that it could be compatible with the current ranching operation.

Senator JOHNSTON. How about on Farallon de Mendinilla?

Mr. PANGELINAN. That's also a part of the package for the military requirement. At the present time there's little activity on Farallon de Mendinilla, other than sporadic bombing exercise by the Navy from Guam.

SUPER PORT

Senator JOHNSTON. How about the prospect for a super port?

Mr. PANGELINAN. Mr. Chairman, in our efforts to encourage economic development in the islands, we have been pursuading a number of investors to look at the Northern Marianas as a possible potential area for investments. About 2 years ago, we had a response from a company in New York, Northville Industries, which has expressed an interest, to see whether a feasibility plan can be developed for a super port in the Northern Marianas. The Northern Marianas Government entered into a memorandum of understanding about 2 years ago, and they have completed a feasibility study, indicating that part of Saipan is feasible for a super port activity.

We have not yet determined the magnitude, the size of the facility or where the funding is going to be coming from. We're still in the discussion stage at this point in time, but the company has identified that part of Saipan as suitable for such an operation.

Senator JOHNSTON. Please keep us advised on that on a week-to-week basis as things move along.

Mr. PANGELINAN. We'll be very happy to provide you with an updated report on this, Mr Chairman.

Senator JOHNSTON. Thank you very much for your testimony. We're always glad to have you at the committee.

Mr. PANGELINAN. Thank you, Mr. Chairman, we appreciate the opportunity.

VIRGIN ISLANDS

STATEMENTS OF:

HON. RON DE LUGO, DELEGATE TO CONGRESS OF THE UNITED STATES FROM THE VIRGIN ISLANDS

HON. JUAN LUIS, GOVERNOR OF THE VIRGIN ISLANDS

ACCOMPANIED BY:

AMADEO FRANCIS, COMMISSIONER OF COMMERCE
CLAUDE CHRISTIAN, ACTING COMMISSIONER OF FINANCE
ROY SCHNEIDER, COMMISSIONER OF HEALTH
LEROY QUINN, DIRECTOR, INTERNAL REVENUE SERVICE
STEPHANOS O'REILLY, BUDGET DIRECTOR
JULIO BRADY, FEDERAL PROGRAM COORDINATOR
THOMAS BLAKE, DIRECTOR, WATER AND POWER AUTHORITY

BUDGET REQUEST

Senator JOHNSTON. Next we're pleased to welcome our friends from the Virgin Islands, Ron de Lugo, the very excellent Delegate. And Governor, we're especially glad to have you back.

Off the record.

[Discussion off the record.]

Senator JOHNSTON. Your whole statement, Ron, will be put in the record, as you know.

Mr. DE LUGO. Thank you. I appreciate that. I wondered—members of the Governor's cabinet are here. They're available.

Senator JOHNSTON. We'd be very pleased to have them join the committee and have them introduced, please.

Mr. DE LUGO. Fine.

Mr. Chairman, as you have noted, my prepared statement will be made a part of the record.

Senator JOHNSTON. Would you like to have the members of the cabinet come to the counsel table?

Mr. DE LUGO. We view this hearing as very important to the interests of the Virgin Islands, and I'm going to skip over my opening and get right down to business.

Senator JOHNSTON. Let me say before you get started, I was very pleased to see you made the deal with Hess on the refinery. I knew you would, Governor, and that's very excellent news, I know, for the island. And I know it was made on your terms, and you're to be congratulated for working out a good deal on that.

Governor LUIS. Thank you very much.

TESTIMONY OF MR. DE LUGO

Mr. DE LUGO. That was the good news, the Hess agreement, but the bad news, as you gentlemen are all aware, is the economic proposals which have been offered by the administration will create unique and perhaps unprecedented problems for the offshore territories. We agree with the President on inflation, and we're willing to share the burden of correcting that problem, but we cannot carry the double burden that tax cuts would force us to bear. How can we cope with a 58-percent reduction in the education assistance programs, when our school population has nearly doubled in the past 10 years, or the elimination of the Community Service Administration, whose programs for the elderly, the handicapped, and the needy have been so effectively utilized in the Virgin Islands, or how can we bear any more reductions in housing programs when with our small population, we have over 5,000 people on the waiting list for housing, or have suffered the loss of 409 public service jobs under CETA programs, that have been literally the only hope for so many of our youngsters?

What we need now are a few tools that will enable us to stand strongly on our own two feet. The requests that we make today are few, and they are tied to a very specific goal: economic stability and self-reliance. These are vital requests for a very basic commodity, commodities like water, and as I mentioned, power—the power needs of the islands. Yesterday the island of St. Croix was without power for the entire day. All business shut down. They are indispensable requests. Without them, regardless of the progress that we've already made, we will not be able to achieve the economic self-reliance that you and we want for the Virgin Islands.

Let me say that I will address just two of the issues here today. And I will touch on a third, because we have other witnesses here with the Governor who can flesh it out.

Hassel Island is in my prepared statement. Economic development will be addressed by Commissioner Francis. We hope we can get some funding for economic development, because, as you know, that has been authorized year after year, but we've never gotten it funded. And we do need help in that area.

On the health facilities, with regard to our hospital facilities, I would, first of all, like to thank this subcommittee and particularly you, Mr. Chairman, for your continued support of our hospital construction projects. Construction of the new health care facilities is proceeding ahead of schedule, and the people of the Virgin Islands anxiously await their completion. But while these hospital projects are moving along so rapidly, inflation is moving even faster. Because of inflation, I must ask the subcommittee to appropriate $24.6 million in order to complete our hospital projects. This is a $3.4 million increase over the earlier request. And Dr. Schneider, who has done such an outstanding job with the Governor on developing these hospitals, will address that issue.

In March of this year, I was successful in having included in the budget reported for the House Interior Committee an authorization for $10 million for fiscal year 1982 to assist us in developing reliable water and power supplies that our economic future will depend upon.

We simply cannot attract new industry and diversify our economic base without this. We run constant risk of losing the industry we do have, because of the critical water and power situation that now exists. There are no grids that we can tap into when our overtaxed generators fail, no neighboring reservoirs of water to assist when our tanks run dry. We are islands alone.

The local government was forced to appropriate—I want to point out here what the government has done—$17.5 million earmarked for other Federal programs, to purchase new backup generators for St. Croix and St. Thomas. This year the Virgin Islands Government has set aside $5 million to begin work on maintenance and repair of its power units. Two years ago the local government acquired three 1 million gallons-per-day desalinization plants, costing $15 million, to mitigate the perennial water problems in the islands. The local legislature is now considering plans to purchase an additional three, half-a-million gallons-per-day desalinization plants at the cost of another $13 million.

So the committee can see that the Virgin Islands Government has taken the initiative, has faced up to this problem, to the tune of $50.5 million that had to be taken from other projects that were vitally necessary in the Virgin Islands, to which must be added other millions of dollars that we have been forced to spend in barging in water during the interim and in repairing and rerepairing overburdened generating equipment that other jurisdictions with a stronger economic base and backup water and power assistance would have scrapped long ago.

We simply must have help in this area. In what has been a painful narrowing of priorities, we're requesting in fiscal year 1982, $6.8 million for the purchase of waste heat recovery boilers and small backup pressure steam turbines to utilize waste stack heat. The net effect will be better heat rates from the gas turbines, additional generation and steam for water production, all from the same amounts of fuel.

To supplement the output of our new locally funded desalinization plants, we are seeking $1.5 million for the addition of wells to the water system of the islands and $1.2 million for a water storage tank for those wells. To eliminate the need for costly barging of water to the island of St. John, we're requesting $850,000 for a reverse osmosis plant for that island.

Mr. Thomas Blake, the Executive Director of the Virgin Islands Water and Power Authority is here with Governor Juan Luis to answer your specific questions on this matter.

Regarding the tax loss, and I understand you addressed this problem this morning with the administration. The progress that the Virgin Islands have made in eliminating the deficit created by fluctuations in the Federal tax code will be totally destroyed if we are once more thrown back into a period of decreased revenues as a result of tax cuts. The proposed tax reductions will be mean a loss of approximately—that is, going according to the administration's original tax proposal—$5.8 million in fiscal year 1981, $15.1 million in calendar year 1981, and projected losses of over $56 million in the years 1983 and 1984.

Senator JOHNSTON. Let me interrupt at this point. I'm aware of the problems there, and there has been some discussion about having an amendment to the admendment to the tax code, simply to exclude the Virgin Islands from the tax reduction. Would that——

Mr. DE LUGO. No; that wouldn't do it, Mr. Chairman. The Congress has faced this issue on two previous occasions and has acted on two previous occasions. Over here on the Senate side, Senator Dole carried the ball for us in the past. Over in the House, James Martin. And the fact is, I know it will be brought up. In fact, I think it was mentioned this morning that we could raise taxes. The local government has the power to put on a surtax, but the problem is there is simply no discretionary income in the Virgin Islands. You are well aware, with the high cost of living down there, Federal employees that are stationed in the Virgin Island are paid at a higher rate than on the mainland, because of the very high cost of living and the high cost of fuel that we've cited.

So we don't have that discretionary income to tax. So what has been done in the past is that a "hold-harmless" clause has been included, and I might say that the Republicans in the House Interior Committee in their minority report support this approach. That is that the Federal Comptroller will certify the impact and the funds that are lost by the local territory, and the Federal Goverment, out of the general fund, reimburse us. The precedent is there. It has been done in the past, and I think this is the only reasonable approach.

Senator JOHNSTON. In the past, as I recall, it has been done. Wasn't it done for just a year or two transition?

Mr. DE LUGO. No; it was done for the specific years that the tax cuts applied. That's exactly the case that we face again.

Senator JOHNSTON. But for how long from here on out?

Mr. DE LUGO. For the 2-year periods, and in one case, it was a 1-year period, I believe. Specific years, and the legislation which will be offered in the House Ways and Means Committee will address it in that fashion.

Senator JOHNSTON. I know, but we're talking about tax cuts here. The Reagan administration is talking about permanent tax cuts. You're talking about 1-year relief from that.

Mr. DE LUGO. I'm talking if the Reagan tax cut package goes to 1984, which, I think, is the date that they're talking about. We were targeting until 1984; thereafter, we'll have to come to that bridge when we get there.

Senator JOHNSTON. What I mean is, in the past when we've had the tax cuts, we gave you relief for a year or two, as I recall, and thereafter, the relief was suspended. Since these are permanent tax cuts, you're talking about a temporary suspension, giving you time to readjust.

Mr. DE LUGO. Give us time to absorb the impact on our economy, and it would be up until 1984, as I've had it drafted.

Senator JOHNSTON. Well, permanent tax relief, I think, is going to be a little bit hard to get now. There's certainly a precedent for, and more importantly, I think there's reason to give you, say, a year tax relief for the readjustment. I think it's going to be rather difficult to get permanent tax relief. I mean a permanent payment in the amount of a tax relief. Otherwise, whatever the rates were back in such-and-such a year would be set for the Virgin Islands forever.

Mr. DE LUGO. What I will say is that we want permanent tax relief, but you cut me back to——

Senator JOHNSTON. Six months?

Mr. DE LUGO. No; not 6 months, not that far, but 1984.

STUDY OF WATER AND POWER PROBLEMS

Senator JOHNSTON. I understand you. Now, with respect to water and power, I'm quite aware of your problems there. It seems to me water and power is the first thing you've got to solve, because there is nothing that runs the tourist away and runs industry away like having no water and no power, and working together with you, we've simply got to solve that problem.

It seems to me what we ought to do is have an in-depth study on your needs, on your conditions, what we need to do over a sustained period of time with respect to water and power, so you can have reliable sources of both. Do you agree that we need that kind of study? If so, who should make it? GAO, would you think?

Mr. DE LUGO. Well, Mr. Chairman, perhaps I should defer on this to the Governor and to Mr. Blake of the Authority, but I would like to say that my gut reaction is we've studied this to death. I think that in the hearings this morning, it was brought up, and I think Chairman McClure responded less than enthusiastically, when he found—I'm now editorializing—that we're targeting quite a significant amount of dollars for a study. I think that we in the Virgin Islands know what the problems are, and I think that those in the Federal Government that have been around, know what the problems are. What I've outlined here, for instance, is a small program which costs $10 million, which takes care of immediate needs, and if a study is going to be made, it should be made jointly between the Interior Department and the Department of Energy, but I think most of the answers can be supplied by the Virgin Islands Government and the Water and Power Authority.

Senator JOHNSTON. Certainly any study would have to be done jointly. I'm not making this a suggestion, but rather almost as an idle question that comes to mind as a possible solution. Is it even thinkable to have Interior take over water and power and assume that responsibility and that financial burden?

Mr. DE LUGO. No; I wouldn't support that. I don't think that that's wise. I think the Virgin Islands Government is getting its act together in the area of power and water.

When an administration targets more than $50 million to a problem, it means business. And I think they are facing up to the problem, and I think right now we need a little help and we need some dollars to buy the supplemental equipment that will get us through.

If I was coming before this committee and just saying, "Help us out," and the Virgin Islands Government hadn't done anything—well, if I were sitting in your seat, I'd run us out of here.

But I'm coming before this committee and saying that the Virgin Islands Government through the Power and Water Authority has put $50 million of its own money on the line and has really addressed this problem. And we need a limited amount of help, and we're asking your committee to support us in that.

Senator JOHNSTON. There's no question that we need to solve the problem. And I think you'll see a cooperative attitude from us.

Mr. DE LUGO. You know, Mr. Chairman, if the chairman will yield, I think the reason that I'm just very nervous about us getting into another study, we in the territories, we in the Virgin Islands have been studied to death. Every time there's a problem, there's a study.

I want—you know, I'd like to see us get in there and solve the problem. And in other words, we just don't need a long, in-depth study.

Senator JOHNSTON. Well, that's right.

But if, on the other hand—if we put up some money, we want to be sure that what we put up is going to get the job done and that everyone is satisfied.

Mr. DE LUGO. That I agree with.

Senator JOHNSTON. So there has got to be some study done, rather than just saying, "Well, here's $10 million. And if that's not enough, we'll come in with some more."

We want to be rather assured that that takes care of your problems and puts you in good long-term shape with water and power.

Mr. DE LUGO. Let me put it this way, Mr. Chairman. If this committee in its wisdom decides it's going to help us with power and water problems, and you decide that either the Department of Energy or Interior, whoever is going to oversee this, they do not have to start from square one. They don't have to retain some outside consultant to spend a third of the money that you're going to earmark for studies. All those answers are there. They merely have to compile what is there and come up with a fast recommendation to this committee, and then we get on with solving the problem.

Senator JOHNSTON. Let me ask Mrs. Van Cleve.

Do you concur with that? Could Interior and the Department of Energy, working with the Virgin Islands Government, come up with a quick study that could tell us what we need in the Virgin Islands?

Mrs. VAN CLEVE. That's entirely possible. The delegate is quite right, there have been many, many studies done over the years, and it should not be difficult to collect necessary data very swiftly.

Senator JOHNSTON. Very good.

If we may then make that request from the committee, that you commence to give us, as quickly as you can, working with the Government of the Virgin Islands what you think their minimum and optimum needs are for water and power.

Mrs. VAN CLEVE. I'm sure that can be done.

Mr. DE LUGO. Thank you very much, Mr. Chairman.

Senator JOHNSTON. Ron, if you will work with Mrs. Van Cleve and DOE to see that that's done, you can get that information to us quickly as possible.

CORPS OF ENGINEERS STUDY

Mr. DE LUGO. Thank you very much, Mr. Chairman.

The Governor reminded me that the Army Corps of Engineers has studied the matter, that he has a task force that has completed its study, and there are several other studies available. So there's plenty of paper.

And I think, basically, that I'm going to rest on those statements and the statements in my prepared text and make way here for the Governor.

I want to thank you though again, as always, for the pleasure of appearing before your committee—it's always a pleasure—and for all your help.

Senator JOHNSTON. Thank you, Delegate de Lugo.

Governor, we are very pleased to welcome you, and would solicit any words from you that you would like to have with the committee.

GOVERNOR'S TESTIMONY

Governor LUIS. Thank you very much, Mr. Chairman.

I would like to first introduce the members of my cabinet.

On my far right is the Director of the Bureau of the Internal Revenue Service, Mr. Leroy Quinn.

Immediately on my right is the Commissioner of Health, Mr. Roy Schneider.

Mr. Tom Blake, next to the delegate, is the Executive Director of the Water Board.

Mr. Amadeo Francis, the Commissioner of Commerce.

I also have here the Federal Programs Coordinator, Mr. Julio Brady, and the Director of the Budget, Mr. Stephanos O'Reilly.

And I have legal counsel, Mr. Bill Blount.

I'd like to start my statement by thanking the Congress and the administration for all it has done over the years to improve the quality of life in the territory.

I'm cognizant of the fact that many millions of dollars have been poured into the territory by this Congress. It is true that now and then we hear some minority groups who would make statements to the contrary, but the record is very clear that the Congress and the past administration have been very helpful to the territory, despite the problems we have.

I do appreciate this opportunity to appear again before this committee, and hope that this appearance will give you a clear understanding of the accomplishments and needs of the Virgin Islands.

I will highlight just those important areas in my presentation and would merely add to statements made by the Delegate, who made a fine presentation.

Since my last appearance before the Congress, the Virgin Islands Government has made significant progress. The fiscal condition of the U.S. Virgin Islands is no longer critical, since we have taken many positive steps to bring improvements to this area.

However, the future of territorial development may be adversely affected by the economic policies of the Federal Government, over which we have no control. Moreover, we are still faced with the task of bolstering our economic base, completing the construction of sorely needed capital projects, costing hundreds of millions of dollars, and meeting our financial needs.

The U.S. Comptroller for the Virgin Islands, in his latest report, indicated that the territorial government had reduced the previously reported deficit of $35 to $12.2 million.

Even though we disagree with the Comptroller's finding of a deficit, his current report, showing a greatly decreased deficit, demonstrates substantial progress in the management of our fiscal affairs.

In line with the management of our fiscal affairs, we have imposed mandatory spending ceilings throughout the government. We have increased the collection of taxes by creation of the Virgin Islands Bureau of Internal Revenue, and additional revenues have also been obtained through legislation requiring advanced collection of local excise taxes.

In a move to improve efficiency in the management of public funds and to reduce waste, I requested the U.S. Comptroller to conduct an audit investigation of several government agencies. Suspected irregularities reported by the Comptroller have been referred for further investigation and appropriate legal action.

In addition, my administration is developing a productivity measurement improvement system to identify nonessential programs and services to be curtailed or eliminated.

Our ongoing 5-year capital improvement plan is intended to expand our economic base. New construction of capital projects has increased tremendously, examples of which are two new hospitals, a criminal justice complex, expansion of the airports on St. Thomas and St. Croix, and the building of schools to accommodate a phenomenal school-age population growth.

Additionally, there are other major construction projects which will commence in the months ahead.

I have also successfully renegotiated a pact agreement with the territory's largest taxpayer, Hess Oil, Virgin Islands, which will secure an assured minimum level of revenues into the V.I. Treasury, including payment of full corporate income taxes and property taxes.

The agreement guarantees a $200 million expansion, with a further promised increase of $275 million.

I'm happy to report that the construction of the two hospitals and the community health centers are about 6 months ahead of schedule.

In order to complete the health facilities, we request funds in the amount of $24.6 million, representing a $4.1 million increase in this year's incremental appropriation.

The V.I. Government is contributing funds from our limited resources to complete all of the off-site utilities for the hospitals.

A major problem of the territory that retards all aspects of our development is the inadequate supply of water and power. Late last year, faced with the imminent collapse of our power generating system, a state of emergency was declared.

The Virgin Islands Legislature, at my request, appropriated funds, totaling $17.5 million, which were used to purchase backup generators, one each for St. Thomas and St. Croix. The result has been a significant reduction in power outages and a marked increase in the overall reliability of the system.

To develop a long-term solution to this problem, the V.I. Water and Power Authority retained the engineering firm of Reynolds, Smith & Hill to undertake an exhaustive examination of the condition of each of the V.I. Water and Power Authority's generating units.

They estimated that $15 million is urgently needed for the maintenance and repair of these units. The territory has identified $5 million from its own resources and needs $9 million more, $5 million in fiscal year 1982 and $4 million in fiscal year 1983 for this purpose.

Additionally, we need $6.8 million for a combined cycle conversion at the V.I. Water and Power Authority.

Another problem facing the Virgin Islands that requires urgent attention has been the problem of water.

Senator JOHNSTON. Governor let me interrupt you there to tell you that I think it's going to be rather difficult to get both the tax add-on and the money for the water and power. I've been in the Appropriations Committee, and it's very hard to come by those dollars.

As you know, everything is getting cut, from food stamps to the Council on the Arts and Humanities. So it's going to be very, very difficult to get both of those. In fact, we're going to have to make some kind of a sustained fight to get one or the other.

I would assume you'd want the tax relief. So, without speaking for the whole committee, I would just say, just as an observation, it's going to be rather difficult to get both.

Governor LUIS. Mr. Chairman, I realize the constraints under which Congress and the Nation are operating. And I am here identifying our needs with an attitude that whatever you can provide, we would be grateful for.

Senator JOHNSTON. We're going to do the best we can and then some. You are very persuasive, and Ron de Lugo is very persuasive and usually ends up doing very well for the Virgin Islands.

But I just make that observation so that it won't come as a surprise.

Governor LUIS. Mr. Chairman, I'm cognizant of what you're saying.

The legislature is currently considering the purchase of three additional small units, which would cost about $13 million. However, funding is now required, to provide additional storage and distribution facilities for the volume of water to be produced.

Since the Delegate touched on these figures, I'm going to skip that area and go into another area that is very important.

In an effort to reduce the territory's dependence on tourism and achieve a greater diversification of the territory's narrow base economy, we are intensifying our efforts to attract new businesses. There are, however, several programs which must be implemented to insure the success of our economic promotion effort.

These include:

One, construction of industrial park facilities to accommodate the new industries.

Two, capitalization of a government development bank to provide medium- and long-term financing to selected industries.

And three, establishment of a revolving fund to be administered by the local Small Business Development Agency.

The 1979 territories bill provided an authorization of $5 million for the purpose of promoting the economic development of the Virgin Islands, but these funds have never been appropriated and the authorization expires at the end of fiscal year 1982.

I am requesting that the committee appropriate the entire $5 million authorized under this law, $3 million for fiscal year 1982 and $2 million for fiscal year 1983.

The President's economic and budgetary proposals, will result in a significant decrease in Federal aid to the territory.

In the area of categorical grants alone, the Virgin Islands stand to lose from $23 to $30 million in Federal funds.

Vital health, educational, and social services programs lacking Federal funding will have to be severely curtailed. We project the loss of almost 900 jobs and cutbacks in services to approximately one-half of all residents of the territory.

Moreover, because of our limited economic base, alternate sources of funding to compensate for the absence of these Federal funds cannot presently be identified or projected.

The block grant system proposed by the President certainly has a sound foundation in its commonsense approach to Federal aid, in that it allows the recipient jurisdiction more flexibility in using Federal funds. Unfortunately, it comes at a high cost of a 25-percent cut in funding.

A loss of such magnitude could spell virtual disaster for us in the territory, since the infusion of Federal grant dollars is a crucial component of our economic system.

Regretably, we do not have the capability in the private sector to adequately absorb the unemployed, which would create the potential for social unrest and increased criminal activity.

Mindful of these considerations, I would be proposing that the Congress act to implement the promise of grant consolidation contained in title V of the 1977 omnibus territories bill.

With the exception of the areas of health, social services, and education, which President Reagan has proposed to merge into block grants, income taxes collected by the Virgin Islands Government, pursuant to the revised Organic Act, represent the most important source of money for the territory. I am going to skip over that since the Delegate adequately covered that area.

Mr. Chairman and members of this committee, I would like to reiterate that I'm here to present the needs, as we see them, and we are aware of the fical constraints that exist. And any help that can be forthcoming for the Virgin Islands we will appreciate, sir.

Thank you very much for having us.

HASSEL ISLAND

Senator JOHNSTON. Thank you very much, Governor. We appreciate your testimony.

Let me just say, finally, I would very much like to do something about Hassel Island. I'm familiar with that situation.

I'm at a loss to say how we can do it, because to acquire that additional property and not acquire additional park property in the continental United States would be very difficult.

On the other hand, not to acquire Hassel Island when the option money has been paid and when the donation of the $2 million would be made is just an opportunity we shouldn't lose. We ought to think very creatively about how we can work something out on Hassell Island.

I think it would be just a dirty shame to lose Hassel Island and see that area just developed into condominiums. We'll have to think very creatively about how to do that. I hope we can find a way to do it.

Governor and Mr. de Lugo and distinguished members of your cabinet, we're very pleased to have you, and we're going to do the very best we can for the Virgin Islands.

Thank you very much.

Governor LUIS. Thank you very much.

Mr. DE LUGO. Thank you, Mr. Chairman.

PREPARED STATEMENTS

Senator JOHNSTON. Have a good flight back. I understand you're rushing to catch an airplane. We will include your statements in the record at this point.

[The statements follow:]

STATEMENT OF RON DELUGO

IT IS A PLEASURE TO BE HERE TODAY AND TO HAVE WITH ME THE GOVERNOR OF THE VIRGIN ISLANDS, THE HONORABLE JUAN LUIS, WHO WILL TESTIFY ON CURRENT CONDITIONS IN THE VIRGIN ISLANDS, AND MEMBERS OF HIS CABINET WHO WILL ANSWER ANY OF THE QUESTIONS MEMBERS OF THE COMMITTEE MAY HAVE.

TODAY, I AM HAPPY TO DAY THAT I FEEL THE VIRGIN ISLANDS HAS TURNED THE CORNER ON MANY OF ITS PROBLEMS, AND I BELIEVE THAT ONCE YOU HEAR THE TESTIMONY TODAY YOU WILL AGREE.

THE KEY TO THIS IMPROVED STATE OF AFFAIRS HAS BEEN THE HESS AGREEMENT. IN APRIL, THE GOVERNOR AND MR. LEON HESS, CHAIRMAN OF THE BOARD OF AMERADA HESS AND ITS SUBSIDIARY, HESS OIL OF THE VIRGIN ISLANDS CORPORATION, REACHED AN AGREEMENT THAT WILL ENABLE THE WORLD'S LARGEST OIL REFINERY TO CONTINUE AND EVEN EXPAND ITS OPERATIONS ON THE ISLAND OF ST. CROIX, AND CONTRIBUTE NEW REVENUES TO THE TREASURY OF THE VIRGIN ISLANDS GOVERNMENT.

WE HAVE COME A LONG ROAD TO HAVE BEEN ABLE TO NEGOTIATE SUCH A COMPLEX PACKAGE, AND GOVERNOR LUIS IS TO BE HIGHLY COMMENDED FOR HIS LEADERSHIP THROUGHOUT THOSE ARDUOUS MONTHS.

ALSO, I AM VERY HAPPY TO REPORT THAT EARLY LAST MONTH I WAS INFORMED THAT THE OFFICIAL POSITION OF THE GOVERNMENT OF THE VIRGIN ISLANDS IS THAT THERE IS NO DEFICIT AT THE CURRENT TIME. THIS, I AM SURE, IS AS WELCOME NEWS TO THE SUBCOMMITTEE AS IT IS TO US. THERE WERE SEVERAL DARK AND HARROWING YEARS WHEREIN IT WAS BEGINNING TO APPEAR THAT A DEFICIT POSITION WOULD BE PERMANENT. BUT THANKS TO THE SUPPORT OF THIS SUBCOMMITTEE, OF THE CONGRESS, AND THANKS TO THE RAPIDLY ADVANCING CAPABILITIES AND INCREASING SELF-CONFIDENCE OF THE VIRGIN ISLANDS PEOPLE AND THEIR LEADERS, AN ANNUAL DEFICIT IS NO LONGER A FISCAL FACT OF LIFE.

HOWEVER, AT THIS POINT, I MUST SHIFT TO A FAR LESS POSITIVE TONE, FOR GOING FORWARD FROM HERE OUR TENUOUS HOLD ON ECONOMIC STABILITY IS ABOUT TO BE SEVERELY SHAKEN BY THE BUDGET PASSED BY CONGRESS LAST MONTH. AS YOU GENTLEMEN ARE AWARE, THE ECONOMIC PROPOSALS BEING OFFERED BY THE ADMINISTRATION WILL CREATE UNIQUE AND PERHAPS UNPREMEDITATED PROBLEMS FOR THE OFF-SHORE TERRITORIES. WE FULLY SHARE THE PRESIDENT'S CONCERN ABOUT INFLATION AND ITS THREATS TO THE ECONOMIC WELL-BEING OF THE UNITED STATES. NOWHERE HAS INFLATION WREAKED GREATER HAVOC THAN IN THE OFF-SHORE TERRITORIES. THE COST OF LIVING IN THE VIRGIN ISLANDS, ALREADY SEVERAL POINTS OVER THE MOST EXPENSIVE AREAS IN THE MAINLAND, HAS SOARED, BUOYED UP HIGHER AND HIGHER BY OUR COMPLETE

AND TOTAL DEPENDENCE ON IMPORTED GOODS AND FOODSTUFFS, FREIGHTED IN ON HIGH FUEL CONSUMING AIR AND SEA CARRIERS.

YES, WE AGREE WITH THE PRESIDENT ON INFLATION, AND WE ARE WILLING TO SHARE IN THE BURDEN OF CORRECTING THAT PROBLEM. BUT, WE CANNOT CARRY THE DOUBLE BURDEN THAT TAX CUTS WOULD FORCE US TO BEAR.

HOW CAN WE COPE WITH A 58% REDUCTION IN EDUCATION ASSISTANCE PROGRAMS WHEN OUR SCHOOL POPULATION HAS NEARLY DOUBLED IN THE PAST TEN YEARS; OR WITH ELIMINATION OF THE COMMUNITY SERVICE ADMINISTRATION WHOSE PROGRAMS FOR THE ELDERLY, THE HANDICAPPED AND THE NEEDY HAVE BEEN SO EFFECTIVE AND SO VERY WELCOME IN THE VIRGIN ISLANDS? HOW CAN WE BEAR ANY MORE REDUCTIONS IN HOUSING PROGRAMS WHEN WE HAVE OVER FIVE THOUSAND PEOPLE ON WAITING LISTS; OR SUFFER THE LOSS OF 409 PUBLIC SERVICE EMPLOYMENT JOBS UNDER CETA PROGRAMS THAT HAVE BEEN LITERALLY THE ONLY HOPE FOR SO MANY OF OUR YOUNGSTERS?

WE ARE JUST GETTING OFF OUR KNEES FINANCIALLY. WE HAVE ALREADY DEMONSTRATED OUR INCREASING POLITICAL AND ECONOMIC MATURITY, OUR ENHANCED SELF-CONFIDENCE. WHAT WE NEED NOW ARE A FEW TOOLS THAT WILL ENABLE US TO STAND STRONGLY ON OUR OWN TWO FEET. THE REQUESTS ARE FEW, AND THEY ARE TIED TO A VERY SPECIFIC GOAL --- ECONOMIC STABILITY AND SELF-RELIANCE THESE ARE VITAL REQUESTS FOR VERY BASIC COMMODITIES LIKE WATER AND POWER. BUT THEY ARE INDISPENSIBLE REQUESTS, AND WITHOUT THEM REGARDLESS OF THE PROGRESS WE HAVE ALREADY MADE, WE WILL NOT BE ABLE TO ACHIEVE THE ECONOMIC SELF-RELIANCE THAT YOU AND WE WANT FOR THE VIRGIN ISLANDS.

I. WATER AND POWER

IN MARCH OF THIS YEAR, I WAS SUCCESSFUL IN HAVING INCLUDED IN THE BUDGET REPORTED BY THE INTERIOR COMMITTEE AN AUTHORIZATION OF $10 MILLION FOR FISCAL YEAR 1982 TO ASSIST US IN DEVELOPING RELIABLE WATER AND POWER SUPPLIES THAT OUR ECONOMIC FUTURE WILL DEPEND UPON. WE SIMPLY CANNOT ATTRACT NEW INDUSTRY AND DIVERSIFY OUR ECONOMIC BASE WITHOUT THIS, AND, IN FACT, WE RUN THE CONSTANT RISK OF LOSING THE INDUSTRY WE DO HAVE BECAUSE OF THE CRITICAL WATER AND POWER SITUATION THAT NOW EXISTS. THERE ARE NO OTHER GRIDS WE CAN TAP INTO WHEN OUR OVERTAXED GENERATORS FAIL; NO NEIGHBORING RESERVOIRS OF WATER TO ASSIST WHEN OUR TANKS RUN DRY. WE ARE ISLANDS ALONG. THE LOCAL GOVERNMENT WAS FORCED TO APPROPRIATE $17.5 MILLION EARMARKED FOR OTHER VITAL PROGRAMS TO PURCHASE NEW BACK-UP GENERATORS FOR ST. CROIX AND ST. THOMAS. THIS YEAR THE VIRGIN ISLANDS GOVERNMENT HAS SET ASIDE $5 MILLION TO BEGIN WORK ON MAINTENANCE AND REPAIR OF ITS POWER UNITS. TWO YEARS AGO THE LOCAL GOVERNMENT ACQUIRED THREE ONE-MILLION-GALLON PER DAY DESALINATION PLANTS COSTING $15 MILLION TO MITIGATE THE PERENNIAL WATER PROBLEMS IN THE ISLANDS. THE LOCAL LEGISLATURE ISNOW CONSIDERING PLANS TO PURCHASE

AN ADDITIONAL THREE HALF-A-MILLION GALLON PER DAY DESALINATION PLANTS AT A COST OF ANOTHER $13 MILLION. GENTLEMEN THAT IS A TOTAL OF $50.5 MILLION, TO WHICH MUST BE ADDED OTHER MILLIONS OF DOLLARS THAT WE HAVE BEEN FORCED TO SPEND IN BARGING IN WATER DURING THE INTERIM, AND IN REPAIRING AND RE-REPAIRING OVERBURDENED GENERATING EQUIPMENT THAT OTHER JURISDICTIONS WITH A STRONGER ECONOMIC BASE AND WITH BACK-UP WATER AND POWER ASSISTANCE FROM OTHER AREAS, WOULD HAVE SCRAPPED LONG AGO.

WE SIMPLY MUST HAVE HELP. IN WHAT HAS BEEN A PAINFUL NARROWING OF PRIORITIES, WE ARE REQUESTING IN FISCAL 1982, $6.8 MILLION FOR THE PURCHASE OF WASTE HEAT RECOVERY BOILERS AND SMALL BACK PRESSURE STEAM TURBINES TO UTILIZE WASTE STACK HEAT. THE NET EFFECT WILL BE BETTER HEAT RATES FROM THE GAS TURBINES, ADDITIONAL GENERATION, AND STEAM FOR WATER PRODUCTION--ALL FROM THE SAME AMOUNTS OF FUEL. TO SUPPLEMENT THE OUTPUT OF OUR NEW LOCALLY FUNDED DESALINATION PLANTS, WE ARE SEEKING $1.5 MILLION FOR THE ADDITION OF NEW WELLS TO THE WATER SYSTEM ON THE ISLANDS AND $1.2 MILLION FOR A WATER STORAGE TANK FOR THOSE WELLS. TO ELIMINATE THE NEED FOR COSTLY BARGING OF WATER TO THE ISLAND OF ST. JOHN, WE ARE REQUESTING $850,000 FOR A REVERSE OSMOSIS PLANT FOR THAT ISLAND. MR. THOMAS BLAKE, THE EXECUTIVE DIRECTOR OF THE VIRGIN ISLANDS WATER AND POWER AUTHORITY IS HERE WITH THE GOVERNOR TODAY TO ANSWER YOUR SPECIFIC QUESTIONS ON THIS MATTER.

II. TAX LOSS REIMBURSEMENT

THE PROGRESS THE VIRGIN ISLANDS HAS MADE IN ELIMINATING THE DEFICIT CREATED BY FLUCTUATIONS IN THE FEDERAL TAX CODE WILL BE TOTALLY DESTROYED IF WE ARE ONCE MORE THROWN BACK INTO A PERIOD OF DECREASED REVENUES AS A RESULT OF TAX CUTS. THE PROPOSED TAX REDUCTIONS WILL MEAN A LOST OF APPROXIMATELY $5.8 MILLION DOLLARS IN CALENDAR 1981, $15.1 MILLION DOLLARS IN CALENDAR 1982, AND PROJECTED LOSSES OF OVER $56 MILLION IN THE YEARS 1983 AND 1984. I ASK, THEREFORE, THAT, WITH REGARD TO TAXES LOST, THE SUBCOMMITTEE ADOPT THE PROPOSAL MADE BY THE MINORITY MEMBERS OF THE INTERIOR AND INSULAR AFFAIRS COMMITTEE TO REIMBURSE THE VIRGIN ISLANDS FOR REVENUE LOST AS A RESULT OF FEDERAL TAX CUTS. AS THE REPUBLICAN INTERIOR COMMITTEE REPORT POINTS OUT, EVERY REDUCTION IN THE INTERNAL REVENUE CODE RESULTS IN AN UNPROGRAMMED LOSS IN LOCAL REVENUE. THIS COUPLED WITH PROJECTED LOSSES OF APPROXIMATELY $30 MILLION DOLLARS IN CATEGORICAL GRANTS, AND WITH RESULTING CUTBACKS IN SERVICES AND LOSS OF JOBS, WOULD TOTALLY DEVASTATE OUR LOCAL ECONOMY.

I WAS ABLE TO HAVE RESTORED IN THE INTERIOR COMMITTEE BUDGET IN MARCH, $10 MILLION DOLLARS TO ASSIST IN THE FINAL PHASES OF THE DEFICIT ELIMINATION PROGRAM APPROVED BY THE CONGRESS IN 1978. IN VIEW OF THE POSITION OF THE VIRGIN ISLANDS GOVERNMENT THAT THERE IS NOW

NO DEFICIT, I WOULD RESPECTFULLY REQUEST THAT THESE FUNDS NOW BE EARMARKED TO SUPPLEMENT TAX LOSS REIMBURSEMENT, FOR WITHOUT THAT PROGRAM WE WILL ONCE AGAIN BE BACK IN A DEFICIT POSITION.

I CANNOT STRESS ENOUGH THAT THE VIRGIN ISLANDS ECONOMY WILL NOT BE ABLE TO WITHSTAND THE EFFECT OF THESE CUTS IF WE ARE NOT REIMBURSED. OUR FRAGILE ECONOMY IS JUST GETTING ON ITS FEET. GIVEN A CHANCE, WE CAN ACHIEVE SECURITY. THE DIRECTOR OF THE BUREAU OF INTERNAL REVENUE, MR. LEROY QUINN, THE BUDGET DIRECTOR OF THE VIRGIN ISLANDS, MR. STEPANO O'REILLY AND THE ACTING COMMISSIONER OF FINANCE, MR. CLAUDE CHRISTIAN, ARE ALL HERE WITH THE GOVERNOR TO ANSWER YOUR QUESTIONS ON THIS MATTER.

III. HEALTH CARE FACILITIES

WITH REGARD TO OUR HOSPITAL FACILITIES, I WOULD FIRST OF ALL LIKE TO THANK THIS SUBCOMMITTEE AND IN PARTICULAR YOU MR. CHAIRMAN FOR YOUR CONTINUED SUPPORT OF OUR HOSPITAL CONSTRUCTION PROJECTS. CONSTRUCTION OF THE NEW HEALTH CARE FACILITIES IS PROCEEDING AHEAD OF SCHEDULE, AND THE PEOPLE OF THE VIRGIN ISLANDS ANXIOUSLY AWAIT THEIR COMPLETION. BUT, WHILE THESE HOSPITAL PROJECTS ARE MOVING ALONG SO RAPIDLY, INFLATION IS MOVING FASTER. BECAUSE OF INFLATION, I MUST NOW ASK THE SUBCOMMITTEE TO APPROPRIATE $24.6 MILLION DOLLARS IN ORDER TO COMPLETE OUR HOSPITAL PROJECTS. THIS IS $3.4 MILLION DOLLARS ABOVE THE AMOUNT REQUESTED EARLIER, BUT I ASK THE SUBCOMMITTEE TO FOCUS, ONCE MORE, ON THE DIRE NEED TO ALLEVIATE THE PROBLEMS OF OVERCROWDING AND OBSOLETE EQUIPMENT WHICH, UNLIKE THE MAINLAND, PLAGUE OUR HEALTH SYSTEM IN THE ISLANDS.

OUR COMMISSIONER OF HEALTH, DR. ROY SCHNEIDER IS HERE WITH THE GOVERNOR TO GIVE YOU MORE DETAILS AND TO ANSWER YOUR QUESTIONS ON THESE PROJECTS.

IV. ECONOMIC DEVELOPMENT

CRUCIAL TO OUR SUCCESS IN ACHIEVING ECONOMIC SELF-SUFFICIENCY IS DIVERSIFICATION OF OUR ECONOMIC BASE. DIVERSIFICATION WOULD MITIGATE THE SEASONAL, CYCLICAL, AND HIGHLY SENSITIVE ASPECTS OF THE TOURIST INDUSTRY, WHILE CREATING JOB OPPORTUNITIES WITH CAREER DEVELOPMENT POSSIBILITIES FOR THE PEOPLE OF THE VIRGIN ISLANDS. IT IS IMPORTANT TO NOTE THAT UNEMPLOYMENT AMOUNT THE YOUTH OF THE ISLANDS IS AS HIGH AS 30%. NEW BUSINESS WOULD CREATE NEEDED OPPORTUNITIES FOR THESE YOUNG PEOPLE. TO ACHIEVE ECONOMIC SELF-SUFFICIENCY THE ISLANDS MUST ATTRACT NEW BUSINESS. IN ORDER TO DO SO, THE VIRGIN ISLANDS DEPARTMENT OF COMMERCE HAS DEVELOPED THREE PROJECTS; (1) AN INDUSTRIAL PARK; (2) A GOVERNMENT INVESTMENT BANK; AND, (3) A REVOLVING LOAN FUND. THE INDUSTRIAL PARK PROJECT INVOLVES THE CONSTRUCTION OF A FACILITY ON ST. CROIX FOR USE BY SMALL INDUSTRY. SUCH A FACILITY IS SORELY LACKING ON THE ISLAND AND

IS A NECESSARY PREREQUISITE TO ATTRACTING NEW BUSINESS. ASSISTANCE REQUESTED TO COMPELTE THIS PROJECT IS $850,000 DOLLARS. EIGHTY TO NINETY POTENTIAL JOBS PER YEAR OVER A FIVE-YEAR PERIOD, ABOUT 450 JOBS, WOULD MATERIALIZE IF THIS PROJECT WERE COMPLETED.

FOR THE GOVERNMENT INVESTMENT BANK TO GET OFF THE GROUND, $3.8 MILLION DOLLARS IS NEEDED. WITH THIS CAPITALIZATION, THE BANK WOULD BE ABLE TO PROVIDE MEDIUM AND LONG TERM FINANCING TO INDUSTRIES DEVELOPING IN THE ISLANDS.

THE REVOLVING LOAN FUND WOULD PROVIDE THE OPPORTUNITY FOR VIRGIN ISLANDERS TO DEVELOP NEW BUSINESSES. BANKS IN THE ISLANDS ARE NOT WILLING TO RISK ASSISTANCE TO LOCAL ENTREPRENEURS, AS THE VAST MAJORITY HAVE LITTLE CAPITAL. THE RESULT HAS BEEN THAT ALMOST ALL OF THE NEW BUSINESS IS CREATED BY PEOPLE NEW TO THE ISLANDS. THE REVOLVING LOAN FUND WOULD BE ADMINISTERED BY THE LOCAL SMALL BUSINESS DEVELOPMENT AGENCY, AND WOULD PROVIDE CAPITAL TO VIRGIN ISLANDERS SEEKING TO DEVELOP NEW BUSINESSES. THE LOCAL GOVERNMENT WOULD NEED $350,000 IN ASSISTANCE IN ORDER TO SEED THE LOAN FUND. I ASK THE SUBCOMMITTEE TO APPROPRIATE THAT AMOUNT. THE COMMISSIONER OF COMMERCE, AMADEO FRANCIS, IS HERE TO ANSWER YOUR SPECIFIC QUESTIONS ON THIS PROGRAM.

V HASSEL ISLAND

FINALLY, I ASK THE SUBCOMMITTEE TO CONSIDER AN APPROPRIATION OF $3,550,000 TO COMPLETE THE PURCHASE OF HASSEL ISLAND IN THE HARBOR OF CHARLOTTE AMALIE, WHICH WAS ADDED TO THE VIRGIN ISLANDS NATIONAL PARK SERVICE HAS ALREADY PURCHASED PROPERTY ON HASSEL ISLAND AT A COST OF $1,050,000 AND HAS NEGOTIATED A TWO-YEAR OPTION PURHCASE AGREEMENT WITH THE OWNERS OF THE REMAINING PROPERTY, 114 ACRES. THE PURCHASE PRICE UNDER THE OPTION AGREEMENT IS $6 MILLION DOLLARS, OF WHICH THE OWNERS WOULD DONATE $2 MILLION DOLLARS. THE PARK SERVICE HAS PAID $450,000 IN EARNEST MONEY WHICH WOULD BE LOST IF THE OPTION, NOW EXTENDED ONE YEAR TO MARCH 1,1982, IS NOT TAKEN. THIS IS A BEAUTIFUL AND HISTORIC ISLAND WHICH IS IN THE NATIONAL AS WELL AS THE LOCAL INTEREST TO PRESERVE.

IN CONCLUSION I WOULD URGE THE SUBCOMMITTEE TO CONSIDER WHAT ARE, IN EFFECT, INVESTMENTS. THE VIRGIN ISLANDS ARE THE SOLID UNITED STATES POSSESSION IN THE MIDST OF A VOLATILE POLITICAL AREA. WE DEMONSTRATE THE SUCCESS OF DEMOCRACY, THE ADVANTAGES OF FREE TRADE. WE ILLUSTRATE THE BENEFITS THAT FLOW FROM OUR UNITED STATES IDENTITY. FOR US TO TOPPLE UNDER THE IMPACT OF FEDERAL BUDGET CUTS PERMISED UPON ECONOMIC DYNAMICS WHICH DO NOT EXIST IN THE VIRGIN ISLANDS, IS TO IGNORE THE

STRIDES WE HAVE MADE AND TO EXPOSE THE PRIDE THE VIRGIN ISLANDS HAS TAKEN IN ITS UNITED STATES AFFILIATION TO THE RIDICULE OF DEVELOPING CARIBBEAN NATIONS.

THE TOOLS WE REQUEST ARE NEEDED FOR THE VIRGIN ISLANDS TO STAND ON ITS OWN TWO FEET, AS ACTIVE AND CAPABLE PARTICIPANTS IN THE AMERICAN WAY OF LIFE IN THE UNITED STATES FRONTIER IN THE CARIBBEAN.

STATEMENT OF JUAN LUIS

I appreciate this opportunity to appear again before this Committee, and hope that this appearance will give you a clearer understanding of the accomplishments and needs of the Virgin Islands.

Since my last appearance before Congress, the Virgin Islands government has made significant progress.

The fiscal condition of the U.S. Virgin Islands is no longer critical since we have taken many positive steps to bring improvements to this area. However, the future of territorial development may be adversely affected by the economic policies of the federal government, over which we have no control.

Moreover, we are still faced with the tasks of bolstering our economic base, completing the construction of sorely needed capital projects costing hundreds of millions of dollars, and meeting our financial needs.

The U.S. Comptroller for the Virgin Islands in his latest report indicated that the territorial government had reduced the previously reported recurring deficit of $35 million to $12.2 million. Even though we disagree with the Comptroller's findings of a deficit, his current report showing a greatly decreased deficit demonstrates substantial progress in the management of our fiscal affairs.

An improved accounting and financial management information system is being implemented and mandatory spending ceilings have been imposed throughout the government. We have created the Virgin Islands Bureau of Internal Revenue as a separate agency responsible for the assessment and collection of taxes in the Territory, which has already increased collections of income taxes. Additional revenues have also been obtained through legislation requiring advance collection of local excise taxes.

In a move to improve efficiency in the management of public funds and to reduce waste, I requested the U.S. Comptroller to conduct audit-investigations of several government agencies. Suspected irregularities reported by the Comptroller have been referred for further investigation and appropriate legal action.

To strengthen our management capabilities, my administration is developing a Productivity Measurement/Improvement System which will provide better scrutiny of government expenditures. My administration has initiated a study to identify non-essential programs and services to be curtailed or eliminated. In addition we have established a central negotiating unit for government union contracts which has enhanced our collective bargaining posture.

On April 24, 1979, the U. S. Comptroller and I signed a Memorandum of Understanding in which we agreed to work together to establish an improved centralized accounting and financial management information system for the Government of the Virgin Islands. Under the agreement, the Commissioner of the Department of Finance is given responsibility for managing the project and coordinating activities with the Director of the Budget, the U.S. Comptroller and other officers of the Territory. The Comptroller agreed to provide technical assistance to support the joint effort which over the past two years has been devoted primarily to the operations of the Department of Finance, which has produced improved efficiency.

Our ongoing five-year Capital Improvement Plan is intended to expand our economic base. New construction of capital projects have increased tremendously, examples of which are two new hospitals, a criminal justice complex, the expansion of the airports on St. Thomas and St. Croix, and the building of schools to accomodate our phenomenal student population growth. Additionally, there are other major construction projects which will commence in the months ahead.

I have also successfully renegotiated a tax agreement with the Territory's largest taxpayer, Hess Oil Virgin Islands Corporation (HOVIC), which will secure an assured minimum level of revenues into the V.I. Treasury, including payment of full corporate income taxes. The agreement guarantees a 200 million dollar expansion with the further promised increase of 275 million dollars.

I am happy to report that the construction of the two hospitals and community health centers is about six months ahead of schedule. Virgin Islands residents are already anticipating the benefits from a more modern and better equipped health care system. Our neighbors in the Caribbean are also aware of our progress and I know that the completion of our hospitals will serve to further enhance the image of the United States in this region.

In order to complete the health facilities, we request funds in the amount of 24.6 million dollars representing a 4.1 million dollar increase in this year's incremental appropriation. Because of higher than anticipated construction costs, the increased funding is needed for the construction of a St. John facility and for hospital equipment for both St. Thomas and St. Croix, including sterilization units, radiological machines and other vital equipment. This final appropriation will secure the completion of this comprehensive health care delivery project. Our government is contributing funds from our limited resources to complete all of the off-site utilities which include a storm drainage system, sewage conduits, domestic water lines, and electrical power.

A major problem of the Territory that retards all aspects of our development is the inadequate supply of water and power. Late last year, faced with the imminent collapse of our power generating system, a state of emergency was declared. The Virgin Islands Legislature, at my request, appropriated funds totalling 17.5 million which were used to purchase back-up generators (one each for St. Thomas and St. Croix), the result has been a significant reduction in power outages and a marked increase in the overall reliability of the system. The balance of the appropriation will be used to replace the dilapidated underwater cable which provides power for the island of St. John, construct a substation, and to provide for the urgently needed maintenance and overhaul of existing power generating units. This emergency allocation, however, required a reshuffling of funds earmarked for other vital capital improvement projects, but represents only a short term solution to this costly long-standing problem.

To develop a long term solution to this problem the V.I. Water and Power Authority retained the engineering firm of Reynolds, Smith and Hill to undertake an exhaustive examination of the condition of each of the V.I. Water and Power Authority's generating units. They estimated that 14 million dollars is urgently needed for the maintenance and repair of these units. The Territory has identified five million dollars from its own resources and needs nine million dollars more ($5 million in FY 82 and $4 million in FY 83) for this purpose. Additionally, we need $6.8 million for a combined cycle conversion system at V.I. Water and Power Authority.

The Territory's water needs also require urgent attention. The territorial government has already acquired three desalinization plants at a cost of 15 million dollars. The Legislature is currently considering the purchase of three additional units which would cost 13 million dollars. However, funding is now required to provide additional storage and distribution facilities for the volume of water to be produced. Last year, a request was made in the total amount of 32.7 million dollars (over three years) to finance the construction of six ten-million gallon storage tanks ($7.2 million), replacement of the inadequate distribution system which is corroded ($10 million), extension of the distribution system to rural areas ($14 million), and the addition of new wells to the system ($1.5 million). Any financial assistance the Congress deems appropriate will contribute to resolving these critical problems.

In an effort to reduce the Territory's dependence on tourism and achieve a greater degree of diversification of the Territory's narrow-based economy, we are intensifying our effort to attract new businesses. There are, however, several programs that must be implemented to ensure the success of our economic promotion efforts. These include: (1) construction of industrial park facilities to accommodate the new industries, (2) capitalization of a government development bank to provide medium and long-term financing to selected industries, and (3) establishment of a revolving fund to be administered by the local Small Business Development Agency. Loan capital would be made available to local entrepreneurs to increase their participation in the economic development of the Territory. The 1979 Omnibus Territories Bill (P.L. 95-348) provided an authorization of five million dollars for the purpose of promoting the economic development of the Virgin Islands but these funds have never been appropriated, and the authorization expires at the end of FY 82. I am requesting that the committee appropriate the entire $5 million authorized in P.L. 95-348 ($3 million FY 82 and $2 million FY 83).

The President's economic and budgetary proposals will result in a significant decrease in federal aid to the Territory. In the area of categorical grants alone, the Virgin Islands stands to lose from 23 to 30 million dollars in federal funds, almost all of which are being utilized by the Virgin Islands government to deliver basic and beneficial services to the populace. Vital health, educational, and social service programs lacking federal funding will have to be severely curtailed. We project the loss of almost 900 jobs and cutbacks in services to approximately one half of all residents of the Territory. Moreover, because of our limited economic base, alternate sources of funding to compensate for the absence of these federal funds cannot presently be identified or projected.

The block grant system proposed by the President certainly has a sound foundation in its common sense approach to federal aid in that it allows the recipient jurisdiction maximum flexibility in using federal funds. Unfortunately, it comes at the high cost of a 25 percent cut in funding. A loss of such magnitude could spell virtual disaster for us in the Territory since the infusion of federal grant dollars is a crucial component of our economic system. Regrettably, we do not have the capability in the private sector to adequately absorb the unemployed which will create a potential for social unrest and increased criminal activity.

As a part of this great nation, Virgin Islanders recognize as valid and appropriate the fiscal restraint being asked of state and territorial governments. For our part, we have initiated positive steps to increase our internal monitoring of the use of federal funds by in-depth training courses and the greater involvement of our newly created Federal Programs Office with the departments and agencies using federal grants. Previous audit recommendations by a special task force and the Comptroller are being reviewed and their implementation coordinated by the Federal Programs Office.

Mindful of these considerations, I will be proposing to the appropriate committee that Congress act to implement the promise of grant consolidation contained in Title V of Public Law 95-134, otherwise known as the Omnibus Territories Bill, with the exception of the areas of health, social services and education, which President Reagan has proposed to merge into block grants.

Income taxes collected by the Government of the Virgin Islands pursuant to the Revised Organic Act represent the most important source of money for the Territory, accounting for over fifty percent of all revenues. The tax reduction proposal of President Reagan will substantially diminish this source and will mean a loss of approximately 5.8 million dollars for calendar year 1981 and the much larger sum of 15.1 million dollars in calendar year 1982. Projected losses in income tax collections to the Virgin Islands would be over 56 million dollars for calendar years 1983 and 1984.

The disruptive impact of these losses on our budgetary and economic systems would completely undo and reverse our steadily improving fiscal prospects. Accordingly, I have requested that our Delegate to Congress seek legislation which would reimburse the Government of the Virgin Islands for any and all revenue losses related to federal income tax cuts, as Congress has done before.

Mr. Chairman and members of the Committee, I would like to thank you for this opportunity to discuss the progress and needs of the United States Virgin Islands. In the past, the Congress has shown commendable interest in the welfare of the people of the Virgin Islands . We look forward to your continued support for the progressive development of our American democracy in the Caribbean.

I will be pleased to respond to any questions. I thank you.

STATEMENT OF ROY L. SCHNEIDER

I AM APPRECIATIVE OF THE OPPORTUNITY TO APPEAR ONCE AGAIN BEFORE THIS COMMITTEE ON BEHALF OF THE PEOPLE OF THE U.S. VIRGIN ISLANDS IN THEIR QUEST TO ENSURE THE AVAILABILITY OF MODERN HEALTH SERVICES IN THEIR HOMELAND AS IS USUAL AND CUSTOMARY IN OTHER AREAS OF THE UNITED STATES. THE PURPOSES OF MY PRESENTATION TODAY ARE TO ACQUAINT NEW MEMBERS AND PROVIDE THIS COMMITTEE WITH AN UPDATE OF OUR PROGRESS IN CONSTRUCTING MODERN HEALTH FACILITIES FOR THE RESIDENTS AND VISITORS OF THE VIRGIN ISLANDS; AND TO PRESENT DATA WHICH JUSTIFY OUR REQUEST FOR FINAL INCREMENTAL FUNDING TO COMPLETE THE CONSTRUCTION OF THOSE FACILITIES.

THE DEPARTMENT OF HEALTH OF THE GOVERNMENT OF THE VIRGIN ISLANDS IS RESPONSIBLE FOR THE IMPLEMENTATION AND ADMINISTRATION OF ALL HEALTH CARE SERVICES FOR THE RESIDENTS AND VISITORS OF THE VIRGIN ISLANDS; APPROXIMATELY 95% OF THESE SERVICES ARE CURRENTLY BEING PROVIDED IN GOVERNMENT FACILITIES. THESE EXISTING HEALTH FACILITIES ARE DILAPIDATED AND IN POOR CONDITION PRINCIPALLY DUE TO THEIR AGE (OVER 25 YEARS AND AS MUCH AS 60 YEARS OLD). ALSO, THERE HAS BEEN A TREMENDOUS INCREASE IN RESIDENT, CONTINENTAL U.S. BORN, NON-U.S. CITIZEN BORN, AND TOURIST POPULATION. AS A RESULT OF THESE CONDITIONS, MANY OF OUR RESIDENTS HAVE HAD TO TRAVEL TO PUERTO RICO OR THE U.S. MAINLAND TO SATISFY THEIR HEALTH CARE NEEDS. IN SOME INSTANCES, THESE DISTANCES OF TRAVEL HAVE CAUSED LIFE-OR-DEATH SITUATIONS, WHICH COULD HAVE BEEN AVOIDED IF ADEQUATE HEALTH CARE FACILITIES WERE AVAILABLE IN THE VIRGIN ISLANDS. ASSUREDLY, HAVING ADEQUATE HEALTH SERVICES AVAILABLE TO VISITORS ASSISTS IN THE CONTINUED GROWTH OF OUR MAIN INDUSTRY--TOURISM.

ADDITIONALLY, THE U.S. VIRGIN ISLANDS PROJECTS THE IMAGE OF THE UNITED STATES IN THE CARIBBEAN. SINCE MOST OF THE NEIGHBORING FOREIGN ISLANDS HAVE POORER HEALTH CARE SYSTEMS, MANY OF THEIR RESIDENTS COME TO THE VIRGIN ISLANDS FOR HEALTH CARE. THE IMAGE OF THE U.S. IN THIS AREA CAN THEREFORE BE ENHANCED THROUGH THE MODERNIZATION OF THE VIRGIN ISLANDS HEALTH CARE SYSTEM AND THE ESTABLISHMENT OF COOPERATIVE HEALTH PROGRAMS.

TO CORRECT THIS MOST SERIOUS PROBLEM, THE GOVERNMENT OF THE VIRGIN ISLANDS, WITH THE ASSISTANCE OF THE U.S. DEPARTMENT OF HEALTH

AND HUMAN SERVICES, DEVELOPED PROJECTIONS OF REQUIRED SPACE AND PROGRAMS FOR A MODERN HEALTH SYSTEM TO SATISFY THE CURRENT, AND PROJECTED HEALTH CARE NEEDS OF THE TERRITORY. DURING FY'79, THE GOVERNMENT OF THE VIRGIN ISLANDS SUBMITTED A FORMAL REQUEST FOR NEW HEALTH FACILITIES FUNDING IN THE AMOUNT OF $61.3 MILLION OVER A PERIOD OF THREE (3) FISCAL YEARS ('80, '81 AND '82). THIS REQUEST RESULTED IN THE CONGRESS APPROPRIATING A GRANT OF $21 MILLION IN FY'80, AND $19.8 MILLION IN 1981.

I AM MOST PLEASED TO REPORT THAT ALL PROJECTS ARE ON, OR AHEAD OF SCHEDULE, AND WE EXPECT FOUR PROJECTS (THE TWO 250-BED HOSPITALS AND THE TWO COMMUNITY HEALTH CENTERS ON THE TWO LARGER ISLANDS) TO BE COMPLETED IN RECORD TIME (ABOUT 2 YEARS) NEXT SUMMER.

THE STATUS OF THE PROJECTS ARE AS FOLLOWS:

HOSPITAL AND COMMUNITY HEALTH CENTER-ST. CROIX

-UNDERGROUND WATER AND SANITARY LINES, ERECTION OF STEEL AND CONCRETE WORK ARE COMPLETED

-LAYING OF TRAFFIC CURBS, PAVING BASE AND CONCRETE SLAB POURS ARE IN PROGRESS AND THE DISTRIBUTION OF 480V 3-PHASE PRIMARY POWER LINES AT THE SITE AND WITHIN THE BUILDING ARE COMPLETED.

HOSPITAL AND COMMUNITY HEALTH CENTER-ST. THOMAS

-ALL CONCRETE WORK INCLUDING CISTERN AND FOUNDATIONS IS COMPLETED

-STEEL ERECTION AND METAL DECKING ARE IN PROGRESS

-HEADWALLS, SITE STORM DRAINAGE PIPING, CONCRETE FOUNDATIONS, UNDERGROUND PLUMBING AND MASONRY WORK ARE MOVING AT A GOOD PACE.

BED-HOLDING FACILITY-ST. JOHN

DUE TO A CONSIDERABLY HIGHER BID PRICE THAN OUR ESTIMATED BUDGET, THE PROJECT WAS MODIFIED FOR RE-BID WITHIN A MONTH.

NEIGHBORHOOD CLINICS

SCHEMATIC DESIGN DOCUMENTS ARE COMPLETED AND CONSTRUCTION DOCUMENTS WILL BE PREPARED FOR BID REQUESTS AT THE END OF MAY.

WITH OUR PLANS FOR THE CONSTRUCTION OF NEW FACILITIES WE HAVE BEEN MAKING PROJECTION PLANS AND UPGRADING OUR PRESENT MANPOWER. (A REPORT FROM A TASK FORCE TO STUDY HEALTH MANPOWER NEEDS HAS JUST BEEN COMPLETED.) MANY TRAINING PROGRAMS, LOCALLY AND ON THE MAINLAND, FOR ALL LEVELS OF EMPLOYEES HAVE BEEN INSTITUTED TO ENSURE A WELL-TRAINED CADRE UPON COMPLETION OF THE FACILITIES. IN COOPERATION WITH THE LOCAL DEPARTMENT OF EDUCATION, PROGRAMS IN VOCATIONAL EDUCATION ARE BEING ADOPTED TO TRAIN STUDENTS FOR MAINTENANCE POSITIONS. AND, WE HAVE EMBARKED ON A MAJOR RECRUITING PROGRAM.

ANOTHER IMPORTANT STEP IN OUR PLANS IS THE REORGANIZATION OF OUR FISCAL OPERATIONS. WE HAVE INSTITUTED REVISED BILLING AND ACCOUNTING TECHNIQUES AND ENHANCED OUR COMPUTER CAPABILITIES TO PROVIDE MORE EFFICIENT PATIENT BILLING, MAXIMIZE REVENUES AND ENSURE IMPROVED BUDGETARY AND FISCAL CONTROL. DUE TO THE UTILIZATION OF UNIQUE AND INNOVATIVE MANAGEMENT TECHNIQUES, WE HAVE BEEN ABLE TO KEEP THESE CONSTRUCTION PROJECTS ON A MORE THAN 4-6 MONTHS AHEAD OF SCHEDULE POSTURE, AND WE HAVE KEPT AHEAD OF INFLATIONARY TRENDS WHICH COULD HAVE INCREASED THE TOTAL COST TO DATE MORE THAN $10 MILLION.

THE CONSTRUCTION OF THESE HEALTH FACILITIES HAS PROVIDED AN INFUSION OF CAPITAL FUNDS INTO OUR COMMUNITY AND TO STATESIDE FIRMS. MOREOVER, THE RAPID EFFICIENT ERECTION OF THE BUILDINGS WITHOUT CONSTRUCTION COST OVERRUNS HAS SERVED AS A GLOWING EXAMPLE TO RESIDENTS AND VISITORS ALIKE, AS TO THE ABILITY OF THE GOVERNMENT TO RESPOND TO CRITICAL NEEDS OF ALL CITIZENS AND TO UTILIZE PUBLIC FUNDS PRUDENTLY.

THE VIRGIN ISLANDS GOVERNMENT IS CONTRIBUTING IN THE CONSTRUCTION OF THESE PROJECTS IN ALL PHASES. THE GOVERNOR HAS RECENTLY IDENTIFIED FUNDS FOR THE EARLY COMPLETION OF ALL OFF-SITE UTILITIES WORK, INCLUDING DOMESTIC WATER LINES, STORM DRAINAGE, SEWAGE LINES AND ELECTRICAL POWER CAPABILITIES, WHICH WILL BE OPERATIONAL SEVERAL MONTHS BEFORE THE BUILDINGS ARE COMPLETED.

WITH THE NEED TO RESPOND TO A CRYING PUBLIC WITH THE TREMENDOUS DEMANDS ON OUR GENERAL SERVICES, AND DUE TO OUR CONSTRAINED RESOURCES, WE NEED YOUR ASSISTANCE IN COMPLETING THESE HEALTH FACILITIES.

YOUR APPROVAL OF THIS FINAL FUNDING REQUEST WILL SERVE TO ILLUMINATE THE PERCEPTION, SENSITIVITY AND IMMENSE FORE-SIGHT OF THE CONGRESS IN PROVIDING ONE OF THE MOST ESSENTIAL OF SERVICES--HEALTH--TO OUR OFF-SHORE AREA, AN OFT-TIMES NEGLECTED PART OF OUR GREAT NATION. THOSE BORN AND UNBORN, WHO WILL BENEFIT FROM YOUR DECISION, CERTAINLY WILL SHARE THE APPRECIATION OF ALL THE PEOPLE OF THE U.S. VIRGIN ISLANDS AND THOSE WHO VISIT AMERICA'S PARADISE.

I WILL BE HAPPY TO ANSWER ANY QUESTIONS.

THANK YOU!

FEDERATED STATES OF MICRONESIA

STATEMENT OF ASTERIO TAKESY, LIAISON OFFICER, FEDERAL STATES OF MICRONESIA

ACCOMPANIED BY EPEL ILON, ASSISTANT LIAISON OFFICER

PREPARED STATEMENTS

Senator JOHNSTON. Next, we have, from the Federated States of Micronesia, Mr. Takesy, who is the Liaison Officer for the FSM.

Mr. Takesy, we are pleased to have you here, sir. We will put your entire statement in the record and hope you will highlight it. We'll have some questions.

Mr. TAKESY. Thank you, Mr. Chairman. Mr. Chairman, before I deliver my formal statement, I would like to submit for the record two relevant documents, one, written testimony by Chairman Setik, Chairman of the Ways and Means Committee of our Congress; two, a more detailed written testimony by Vice President Tun of our fiscal year 1982 budget request.

Senator JOHNSTON. That will be attached to the record.

[The statements follow:]

Statement of Raymond Setik, Senator, Congress of the Federated States of Micronesia

Mr. Chairman, I am Senator Raymond Setik, Chairman of the Committee on Ways and Means of the Congress of the Federated States of Micronesia. I am here today, on behalf of our legislative branch, to express our complete support of the statement presented by Vice President Petrus Tun. During the two years since the establishment of our National Government, the Congress has striven to assist President Nakayama in the difficult process of organizing the Executive Branch and implementing its constitutional responsibilities. I very much appreciate the opportunity to appear before this Committee and would like to briefly highlight a number of issues of particular concern to the Legislative Branch.

The Congress of the Federated States of Micronesia has been concerned with providing from inception for proper financial management and accountability in our new government. We have funded full scale audits by an independent C.P.A. firm of local revenues for FY 1979 (a copy of the audit report is attached for the record) and of both local revenues and U.S. grant funds for FY 1980. We are also working with the Executive Branch in seeking improved means of financial administration beyond the Financial Management System operated in the Trust Territory, a process that will certainly involve substantial expense.

As a Senator from the State of Truk, I would emphasize the need for immediate and major repairs to the Truk Hospital. This hospital is of vital importance to the 40,000 people of my state.

The Congress has also been particularly concerned about the need to build and maintain adequate infrastructure, especially to support economic development. This needs to be accompanied by sufficient operations funds for maintenance, and rehabilitation from the typhoons that frequently destroy important facilities on our islands.

We fully support the Vice President's statement on the rapid transfer of the functions and matters still retained by Trust Territory Headquarters. I would call particular attention to making available funds from the Economic Development Loan Fund to provide desperately needed private investment capital. The Federated States of Micronesia is prepared to responsibly administer these funds.

Mr. Chairman, I will conclude by stating the urgency and need for new facilities for the Community College of Micronesia, located on Ponape. Funds authorized over six years ago for this purpose have yet to be appropriated, and without these the Community College simply may not survive. In fact, on May 3, 1981 a dormitory burned down and $200,000 is urgently needed to replace it.

I will provide for the record, resolutions on the issues I have discussed that have been adopted by our Congress. Thank you very much, Mr. Chairman.

Statement of Petrus Tun, Vice President, Federated States of Micronesia

Mr. Chairman and members, I am Petrus Tun, Vice President of the Federated States of Micronesia and am accompanied by Senator Raymond Setik, Chairman of the Committee on Ways and Means of our Congress. With us are Mr. Del Pangelinan, Budget Officer for the Federated States and Dr. Dan Perin, our National Planner. I very much appreciate the opportunity to testify on behalf of the National and State governments and to present directly to this Committee our views on the Fiscal Year 1982 Budget for the Federated States of Micronesia.

We regard Fiscal Year 1982 as the time when the Federated States of Micronesia will assume substantial new responsibilities in preparation for the Compact of Free Association. The successful assumption of these important functions will fulfill important aspirations of the Micronesian people and will be seen as discharging a basic U.S. responsibility under the U.N. Trusteeship Agreement. However, we must candidly state that the Federated States of Micronesia still faces enormous hurdles, particularly regarding basic infrastructure and economic development. As we testified to this Committee last year, the Compact could become a vehicle for governmental and economic chaos unless certain critical needs are addressed without delay. The timing is particularly unfortunate for us as we seek fulfillment of long postponed commitments at a time of extreme budget constraints.

We understand the very real and severe budget constraints being experienced by the United States, but as representatives of the Federated States of Micronesia, we have an obligation to present our vital and urgent needs. The Federated States of Micronesia seeks funding at this time for those requirements which we perceive to be directly related to the stability and maintenance of our government as a political unit, and to achieving eventual self-sufficiency under the Compact. My statement today will first update from last year our political and economic situation second, describe funding requirements in the areas of operations, economic development and special projects, and conclude with a list of priorities regarding funding needs.

Political Situation

The major political issue facing us at this juncture concerns proceeding with the Compact of Free Association. At the end of last October, we initialled a basic agreement with the United States which would establish a status of free association between our two countries. With this agreement almost complete, the FSM Government recently initiated conferences in the scattered state municipalities in order to inform the Micronesians of its terms and the responsibilities of free association. At the same time, with direct U.S. assistance, we have translated the draft compact document into our nine major languages, and are preparing for a political education activity that will allow the population of Micronesia to familiarize themselves with this agreement in detail. Our government desires to complete, as soon as possible, the negotiations on various agreements subsidiary to the Compact and to terminate the U.N. Trusteeship Agreement. It is with that sense of urgency that we look toward completing the political, economic, education and health system requirements of a transitional period which is already well underway.

We have made very positive progress in the establishment of our political institutions as the State and National governments of the FSM will be two years old this summer. During that short period of time we have reached a number of important bench marks in the difficult process of developing a responsible, stable national entity in the Pacific.

I am very pleased to report to you that the National Government of the Federated States of Micronesia is now completing its staffing and organization. This has been made possible largely by the addition of funds by this Congress to our Fiscal Year 1980 and 1981 budgets, and we are deeply grateful for this assistance. The most recent addition has been the confirmation of the justices of our Supreme Court. The FSM Supreme Court has already been certified and will commence operation of our Judiciary Branch on July 12, this year.

We celebrate this week, on May 10, the second anniversary of our constitutional government, and stand ready to take on major new responsibilities that are still being exercised by Trust Territory Headquarters. We believe that the vital task of expeditiously transferring such essential functions as authority over federal programs, communications, capital improvements, financial management, the Economic Development Loan Fund, and others, should be accomplished as soon as possible.

We are hopeful that this Congress, as well as the Administration, will recognize and support actively our urgent concern that the devolution of administrative authority continue to completion as promptly as possible. There is no essential reason to retain a large administrative structure at Headquarters on Saipan.

Economic Situation

This Committee has long been aware of the economic stagnation and major development hurdles faced by the FSM. The problems we inherit of high unemployment, complete dependence on government expenditures, a widening trade imbalance where imports exceed exports by a factor of 20 to 1 and deteriorating economic infrastructure remain with us. Rather than highlight the details of these problems, I would like to discuss the actions and plans of our new government for development of a viable economy, especially in the private sector.

Our present emphasis is on the preparation of a comprehensive 5-year development plan, a process initiated in April 1980 which we expect to complete by August of this year. Reflecting the nature of our Federation, the plan will synthesize and combine into a cohesive National Planning Policy detailed development plans for each of the four states. These state plans will include the actual productive projects to be undertaken, identify required capital improvements and infrastructure investments, make budget recommendations and direct the development of manpower skills. A major component of the plan will be a 5-year energy program, that will dramatically reduce our dependence on petroleum-based power generation, yet will ensure that each state has the fuels needed for social services and economic growth. Also included is the development of a statistical capability so that for the first time each state will be able to provide up-to-date economic and social data to its own leadership, the United States and other nations and international organizations.

The plan being developed is not being prepared by an outside agency, such as the United Nations, or by an outside consulting group. Rather planning groups have been formed in each state composed of state executive, legislative and municipal leaders. These planning groups have, for the first time, taken the planning program into all municipalities of the FSM. If our plan for a self-sufficient local economy is to work, we must begin in the communities where implementation of the activities will occur.

The planning philosophy or message the state planning groups are carrying to the people of the Federated States is clear and simple.

- Responsibility for development rests with the people of the Federated States of Micronesia.
- Municipalities and states must determine investment priorities to develop and support new economic activities that will replace total reliance on U.S. grants with local renenue and employment generating activities.
- The building process must be initiated immediately and local revenues and resources should, to the maximum extent possible, be devoted to this.

Funding Requirements

I would now like to present our views on the FY 1982 budget and will divide these into three areas of operations funding, economic and infrastructure development and special projects.

1. Operations Funding

The Federated States of Micronesia operations budget for Fiscal Year 1982, as proposed by the Administration, will provide $32,814,000, a reduction of $1,786,000 from the Carter budget. This reduction will severely affect operations, particularly for the state governments that provide the vital health, education and public works services to our people. We feel the Committee should be aware that, adjusted for inflation, the operations funding for FY 1982 plus our share of the special fuel and maintenance funds, provides the states with a lower funding level than was available to them in FY 1977, even though they are absorbing the transfer of many new functions from T.T. Headquarters.

The state government budgets have been severely overburdened as a result of soaring fuel, medical and maintenance costs, a situation that is seriously disrupting critical public services. Despite the FY 1980 fuel supplemental, sharply escalating prices have caused fuel costs to absorb an increasing share of the operations budget forcing across-the-board reductions in other program areas. As an example, the $1,786,000 reduction in our operations budget for FY 1982 has been included as part of the $2,500,000 fuel reserve (leaving intact the originally budgeted fuel amounts). Our state governments have also been spending increasing amounts on medical referrals due to the greater cost of referrals although controls have kept the numbers in check (see Attachment No. 2). Another burden on state operations budgets has been budget deficits of $1,400,000 incurred by these governments in FY 1979, prior to the fuel supplemental, which the states have been unable to reduce. In addition, the planned reduction by the Administration in Federal Programs will severely affect the states which are so dependent on these programs in the areas of health, education and alternative energy development.

To maintain any viable level of essential services, we request an increase in our operations budget to $38,500,000, the level that would be provided in the Compact, adjusted for inflation (included in this figure would be the FSM's share of the fuel reserve, $1,786,000). This will enable the state governments to eradicate the FY 1979 deficits and avoid a major deterioration in service just prior to entering the Compact period.

2. Economic and Infrastructure Development

As I described earlier, our hopes for the future are based on developing a self-sustaining private sector economy. We find the absence of any funding in the Administration's FY 1982 budget for basic infrastructure or development projects to be a glaring omission. While funding for this is included in the Compact, there are no funds included to fill the gap between the time of its implementation and the termination in FY 1981 funding to complete the initial five-year Capital Improvement Program.

Because investments and infrastructure and development projects are so urgently needed, the four state five-year plans have already identified and scheduled development projects and capital improvements for FY 1982. The sum of these projects, $24.5 million, is framed around the minimum amounts included in the Compact for this. While a list and explanation of each of these projects is presented in Attachment No. 3, I would like to briefly describe those projects we consider to be of highest priority.

Ponape

Capital Improvements: Two 800kw diesel generators. The critical need for these generators is presented in the Attachment, FSM Energy Information; cost $787,000.

Development: The establishment of a pig multiplication center; cost $55,000.

Truk

Capital Improvements: An airport in the Mortlocks on the island of Ta; Cost $1,000,000.

Development: The continued expansion of the Dublon (Truk Lagoon) Fisheries Complex; cost $300,000.

Kosrae

Capital Improvements: Cross Island Road: a rural farm road from the Lelu Harbor over the mountain to Okat; cost $120,000.

Development: Citrus (limes) production and processing for export; cost $100,000.

Yap

Capital Improvements: Southern Yap Water System; cost $1,164,000.

Development: Agricultural Development Plan Activities, Phase I, Production Programs; cost $250,000.

3. Special Projects

In addition to the added funds requested for operations and infrastructure/economic development, the Federated States of Micronesia faces pressing needs in a number of other areas which I will now address.

a. Truk Hospital

The Truk Hospital, built in 1971, lies today in a deplorable state of disrepair. A leaking roof and electrical and plumbing defects seriously detract from the quality of medical care and endanger the lives of the patients. The defects are also causing irreparable damage to the sophisticated and expensive medical equipment in the hospital. The urgent need for extensive renovation of the hospital has been expressed by by the Headquarters Public Works Department and by a visiting representative of the U.S. Department of Health and Human Services, as well as by numerous other official visitors.

Since its construction some nine years ago, the Truk Hospital has not had adequate maintenance funds, despite repeated efforts by our Congress to include funding in the budget. The High Commissioner just recently has authorized half a million dollars to begin the most urgent repair work on the Hospital. Our most recent estimates indicate that $1.4 million in additional funds are needed to complete this project.

b. Communications

The Federated States of Micronesia has regarded the establishment of modern, reliable and self-supporting communications service as fundamental to economic development, government operations and basic human needs. Accordingly, we are pleased to be in the process of imminently signing an agreement with COMSAT that will provide for a satellite earth station in each of the state capitals, the first of which will operational by March 1982. To effectively utilize the new satellite communications network, the Federated States of Micronesia has undertaken, with the help of an international team of communications experts, a comprehensive plan for the institutional management on a self-supporting basis of the communications system and a complementary local network.

The communications planning process has identified major deficiencies in the local network that will severely hamper operation of the satellite system and leave uncorrected critical local needs. While some of the communications upgrade funds appropriated in Fiscal Year 1980 and 1981 have been redirected to improve the ground communications system and there will be some upgrading of outer island communications, this funding will clearly not achieve the objectives for which it was intended. The major unaddressed needs include a hospital communications system, power supplies for telephone exchanges, added telephone exchange switching, a maritime system and personnel training (see Attachment No. 4 for a description and cost estimate of the items included). In Fiscal Year 1982 we request a continuation in the communications upgrade funding in the amount of $2,739,000 to be included in the budget for the Federated States of Micronesia.

c. Financial Management

One of the major priorities of the Federated States of Micronesia in establishing its new government is providing proper financial management and accountability, a process that will require substantial improvements over the existing system. To address this issue we arranged, using transition funds, for the Federal Computer Performance Evaluation and Simulation Center (FEDSIM) of the Department of the Air Force to conduct a comprehensive study of the most appropriate means of financial administration for this government. A preliminary report received from FEDSIM describes the very substantial improvements needed in financial administration for the Federated States of Micronesia. While we are currently evaluating a number of alternatives, any of these will involve significant additional costs (see Attachment No. 5).

d. Maintenance

Maintenance of public facilities in Micronesia is a major problem. As we have stated in our past appearances, the need for maintenance funding is urgently needed to provide proper and scheduled maintenance of public facilities in the FSM. Lack of maintenance is clearly visible all over the FSM. Facilities are deteriorating, and equipment has been sidelined for months due to lack of spare parts. In the state of Ponape, all eight power generating units are experiencing problems due to lack of proper maintenance. The State is on the verge of a complete power blackout.

In FY 1981 the administration removed $1.5 million for the FSM state operations budgets to undertake some of the most urgent maintenance needs and has commissioned a study to determine our maintenance requirement and level of funding needed to carry out this project. We support the Administration's efforts and request that funding be made available over the next three or four years to upgrade and repair our existing facilities. In conjunction with this effort, we seek the Committee's assistance in providing funding to train our local personnel to better qualify them to maintain our facilities.

e. College of Micronesia

The governments of the three Micronesian entities fully support a post-secondary education system in the territory to provide the training and manpower development needs of these emerging nations as they affirmed in the July 1980 joint resolution. In further support of this commitment, the State of Ponape has donated 100 acres of land for the new Community College campus.

The Community College of Micronesia on Ponape is presently located on a two-acre interim campus in Kolonia. The buildings are old and inadequate to support increased enrollment, and two weeks ago one of the men's dormitories burned down. In its June 1980 evaluation report, the Accrediting Commission of Community and Junior Colleges, Western Association of Schools and Colleges expressed dissatisfaction with the condition of facilities by placing the college on probation with strong warning that accreditation would be withdrawn if conditions were not improved. This warning cannot be ignored. The very existence of the Community College of Micronesia depends on its maintaining accreditation status in order to be qualified for other education federal grants which provide more than one-third of its operating budget.

Since the enactment of PL 94-255, the Congress of Micronesia and now the FSM government have been requesting funds for the relocation of the Community College to Palikir on the 100-acre land donated by Ponape. Our current plans are to consolidate the A&E for the Capital and the Community College into one package. This, we believe, is an appropriate and cost-saving approach since both of these facilities will be located in the same general location and sharing the same utilities system, roads and other public facilities. Funds in the amount of $400,000 are, therefore, requested in FY 1982 to proceed with the design, architectural and site development for a new and improved Community College on Ponape.

Priorities

Because we consider the funding requirements described in the preceeding section as basic to our survival as a stable government and to achieving eventual self-sufficiency during the Compact period, we are very ill-prepared to set priorities among these needs. However, given the budget realities we face, I would like to conclude by providing a priority listing of the most urgent and critical requirements in addition to the Administration's FY 1982 budget.

1. Truk Hospital: The existing conditions present a life threatening situation that must be corrected--$1,400,000.
2. Communications: It is imperative to continue the local network upgrade funded in FY 1980 and 1981 for this vital element of our infrastructure--$2,739,000.
3. Economic and Infrastructure Development: This is the basis for our future aspirations and the halt in funding as of FY 1981 will only serve to prolong our dependence on you--$24,500,000 (including $3,776,000 in highest priority projects).
4. Operations: These funds are the minimum needed to maintain basic health, education and public works services so as not to experience a serious deterioration as we

enter the Compact period--$5,686,000 (for a total of $38,500,000 including the FSM's share of the fuel reserve $1,786,000).

Mr. Chairman, I thank you for the opportunity to discuss our concerns regarding the FY 1982 budget and hope you will consider these with your past understanding of our needs. Our delegation will be glad to answer any questions you may have.

Attachment No. 1

FSM Energy Information

The following material is presented to give a clearer picture of the energy situation in the Federated States of Micronesia. The document contains:

I. Energy Program Administration in the FSM.

II. Fuel Demand in the FSM.

  A. Annual Energy Production, Load Curves/Average Monthly Petroleum Consumption, Energy Cost-Demand Curves.

  B. Projected Fuel Expenditures.

III. Power Production Costs, Consumer Costs-Collections.

IV. Kosrae Hydro-Electric Project.

V. Energy: Technical Services Assistance.

NOTE: The information and data presented in this paper are drawn from material being collected from the FSM Five-Year Energy Plan. They are initial estimates and may be subject to change. The data does, however, give a good general picture of conditions in the FSM.

I. ENERGY PROGRAM ADMINISTRATION

There are three major energy program efforts now going on in the FSM. The major problem the FSM faces in getting the maximum benefit from these programs is that there is too little coordination among the program administrators. The major problem in coordination seems to be that Trust Territory Headquarters administration of its two energy programs is not well coordinated with FSM energy planning activities. We suggest that the full administration-implementation of all energy programs be placed in the FSM so that a natural growth of energy management capabilities is established in the FSM in preparation for termination of the Trusteeship.

At present the FSM has two full-time employees working at the National level on energy policy, programming and planning. Larry Slominski, FSM Energy Planner, will complete state five-year energy plans, and a consolidated national energy plan by July or August of this year. (An outline of the FSM Five-Year Energy Plan is attached, Appendix I.) This planning program is assisted and critiqued by the FSM Energy Advisor Mr. Tom Hall.

At the same time Trust Territory Headquarters is preparing an energy plan for the FSM under the mandate of Public Law 96-597, with the cooperation and assistance from the U.S. Department of Energy. In this regard an appropriation of $1,000,000 is being requested in the 1982 budget (or preferably in the 1981 supplemental) for the development of a comprehensive energy plan for the territories.

So we have two energy plans being developed, one by the FSM in coordination with its Five-Year Overall Economic Development Plan, and one by T.T.P.I. Headquarters and the Department of Energy in response to the mandate referenced in PL 96-597.

We believe that such duplicate planning activities are redundant, and an unnecessary use of money that might profitably be used to actually assist in the development of alterntive energy systems.

In addition to the above mentioned activities, the Department of Energy categorical grant programs; including Energy Extension Services, and State Energy Conservation Planning are being actuated in the FSM under the full direction and administrative control of T.T. Headquarters Planning Office. With the reduction in T.T. Headquarters staff this planning and program effort has not had the beneficial effect it might have had if these programs were administered by the FSM Government and a focused, FSM centralized, total planning activity were organized.

We suggest that full responsibility for FSM state and national energy policy, programs and planning be delegated to the FSM state and national governments, and that administrative activities now carried on by T.T.P.I. Headquarters, on behalf of the FSM, be transferred or delegated directly to the FSM national government.

This does not mean that T.T.P.I. Headquarters should not retain the necessary oversight functions to ensure that U.S. Legislative and D.O.I.-D.O.E. mandates are carried out. The FSM stands ready for technical assistance, management, program review and auditing required by these programs. But the primary focus of administrative, program and planning activities should rest with the FSM in accordance with transfer of functions Agreements, and supporting further implementation of the transition process already underway in the Trust Territory; the transition toward stable and capable governments in the entities.

II. FUEL DEMAND IN THE FSM

II.A. Annual Energy Production, Load Curves/Average Monthly Petroleum Consumption, Energy Cost-Demand Curves

II.A.1. Annual Energy Production

The following Table presents FSM estimates on electrical power production. The production trends have been estimated through the remainder of 1981, and for 1982 - 1983. Recent power failures in the State of Ponape will dampen the production estimates for 1982.

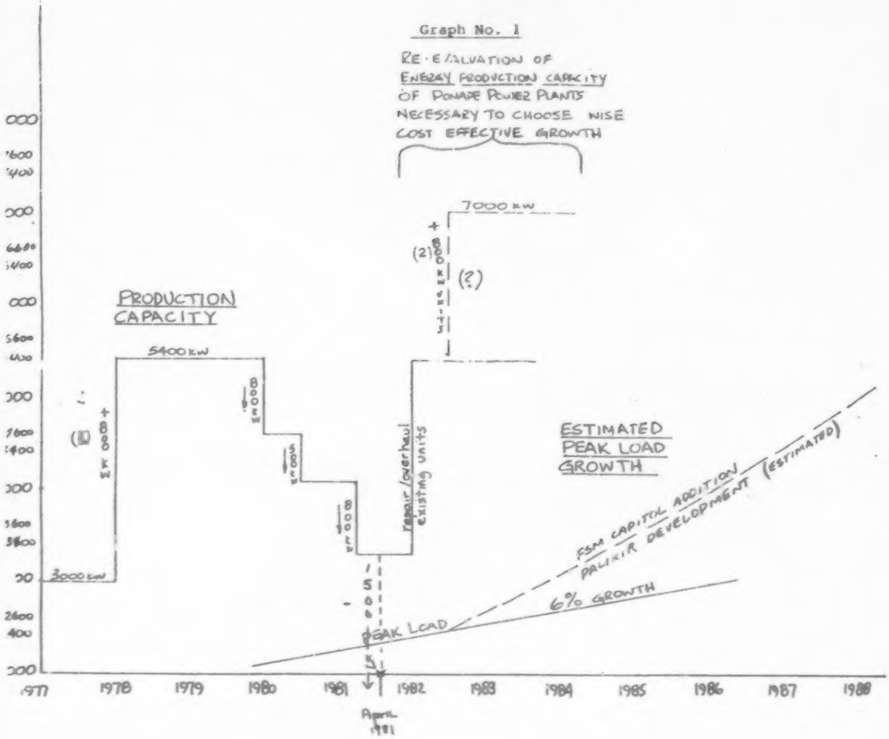
Table 1. FSM Energy Production

(Figures in thousands of kilowatt hours)

Fiscal Year	Kosrae	Ponape	Truk	Yap	FSM Totals
74		8,111			
75		8,368		6,104	
76		10,350		5,509	
77		10,703		6,668	
78		13,139		7,671	
79		12,979	11,782	7,714	
80	2,160	14,778	11,316	7,619	35,864
81	2,376	13,000*	12,447	7,990	25,813*
82	2,614	18,200	13,690	8,390	42,894
83	3,000	20,020	15,060	8,809	46,880

*Power production failure resulting from breakdowns in generating equipment have reached a critical state on Ponape, the second largest state (by population), and seat of the FSM national government. The loss of power for state and national government operations has severly limited government functions including communications, health and educational services; (a) ATS (satellite) systems have ceased to function except at hospitals, (b) hospital power generation has relied on the full-time operation of auxiliary generators not meant to carry the load on a permanent basis, (c) schools have been let out for lack of adequate lighting, ventilation and operating functions, and (d) the commercial sector has suffered with spoilage of food in freezers and refrigeration.

The relationship between power production units and power demand is presented in the working graph presentation below. This graph was drawn up before the recent round of power failures. Thus, we have added this component breakdown in the system under the X-axis addition April 1981, and marked with a dotted line.



Graph No. 1

As can be seen, the loss of both 750KW Whites at the Kolonia Power Station, drops rated capacity below peak load requirements, down to a rated capacity of 1400 to 1800. If the system runs at about 80% rated capacity, the firm production at the end of April was around 1,440KW.

Our notes on existing production (April 1981) indicate:

A. Power Plant Site: Kolonia

1. Two 750KW Whites, purchased in 1972, both broken down (never had a major overhaul).
2. Three 500 CATS, purchased in 1968, one down, two running.

B. Power Plant Site: Nanpohnmal

1. Three 800KW CATS, purchased 1976, installed 1978, two broken down with crankshaft failures due to oil starvation.

This leaves two 500KW whites (1968) and one 800KW CAT still in operation with a rated capacity of around 1800KW and an estimated operating production from 1400 to 1800KW.

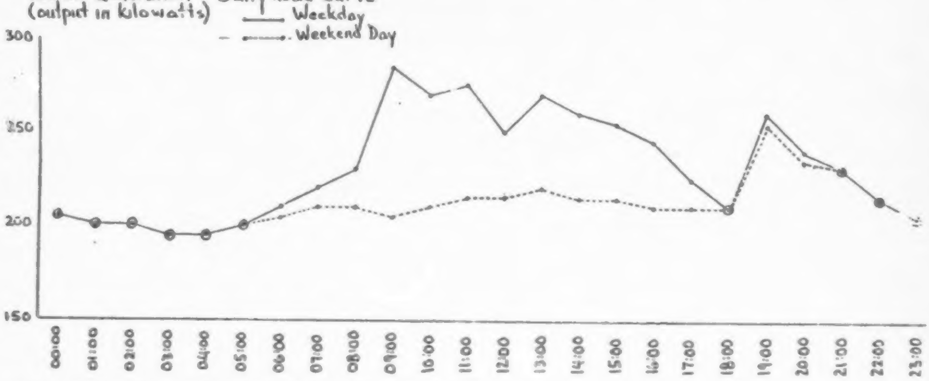
II.A.2. Load Curves/Average Monthly Petroleum Consumption

Early in 1981 the FSM governments estimated load curves for each of the states. These early esitmates were transmitted to the U.S. Department of Energy in February, 1981. Some of the power generating capacities have changed, some of the estimations have been updated, but a general picture of the power load curves for each state, and initial estimates of petroleum consumption are helping to fill out our energy picture. Please note these are working graphs:

Graph No. 2 - Kosrae

- Population: 6,000
- Area
  - Land: 41 sq. mi.
  - Ocean: ?
- Electric Generating Capacity 140
  - Installed: 1800 KW ?
  - Operational: 1200 KW
- Avg. Monthly Power Generation: 150,000 KWH using 15000 gallon diesel/month
- No. of Electric Customers: 775
  - Avg KWH consumption/mo: 425
- No. of Vehicles: 325

- Power Generation - Daily Load Curve (output in kilowatts)



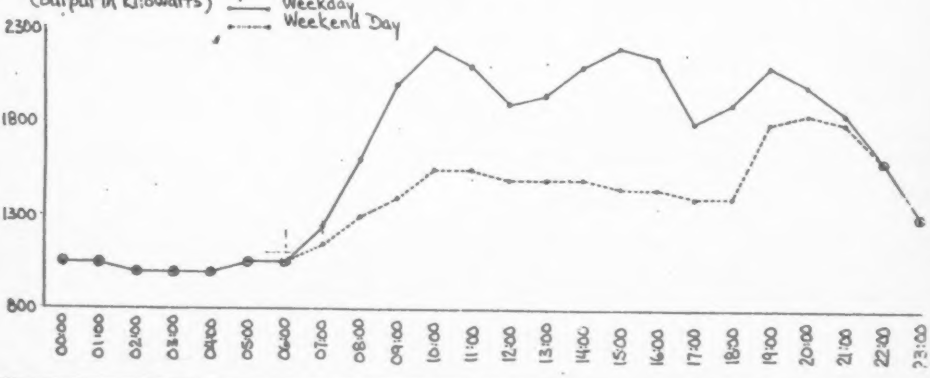
- Average Monthly Petroleum Consumption (gallons)

Diesel	MoGas	Jet Fuel	Kerosene	AvGas	LP Gas	Total
23,000	12,300	- 0 -	2,800	-0-	- 0 -	38,200

Graph No. 3 - Ponape

- Population: 24,000
- Area
  - Land: 146 sq. mi.
  - Ocean: ?
- Electric Generating Capacity
  - Installed: 5400
  - Operational: 4100
- Avg. Monthly Power Generation: 1,100,000 KWH
- No. of Electric Customers: ?
  - Avg KWH consumption/mo: ?
- No of Vehicles: 900

- Power Generation - Daily Load Curve (output in kilowatts)



- Average Monthly Petroleum Consumption (gallons)

Diesel	MoGas	Jet Fuel	Kerosene	AvGas	LP Gas	Total
165,000	56,500	65,000	10,000	3,200	(20) 100 lb cyl.	299,700

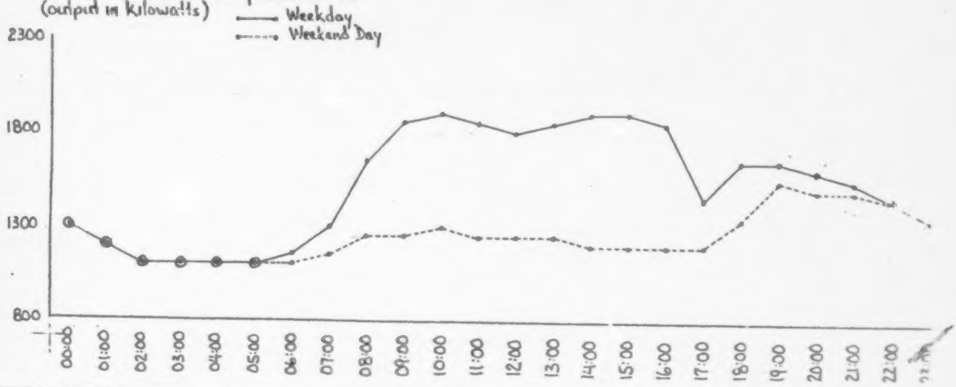
Graph No. 4 - Truk

- Population: 37,000
- Area
  - Land: 45 sq. mi.
  - Ocean: ?

- Electric Generating Capacity
  - Installed: 6,150
  - Operational: 3,400
- Avg. Monthly Power Generation: 950,000 ~~800~~,000 KWH

- No. of Electric Customers: ?
  - Avg KWH consumption/mo: ?
- No. of Vehicles: 750

- Power Generation ~ Daily Load Curve (output in kilowatts)



- Average Monthly Petroleum Consumption (gallons)

Diesel	MoGas	Jet Fuel	Kerosene	AvGas	LP Gas	Total
133,000	70,000	27,000	11,200	–	20 (100 lb. cyl.)	241,200

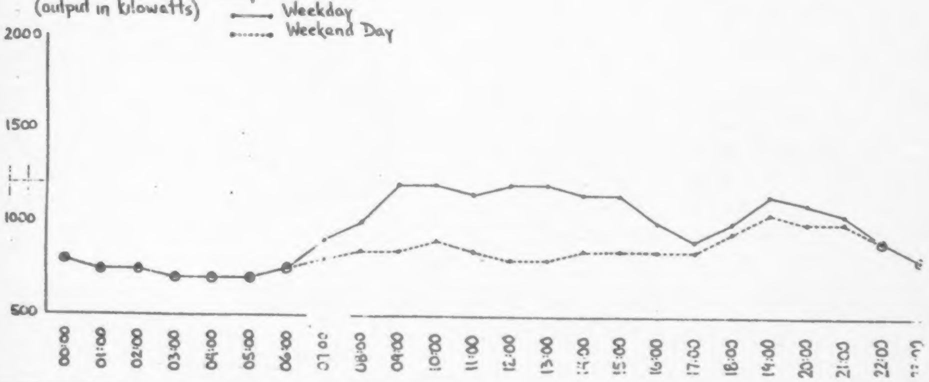
Graph No. 5 - Yap

- Population: 9,400
- Area
  - Land: 47 sq. mi.
  - Ocean: ?

- Electric Generating Capacity
  - Installed: 4350 KW
  - Operational: 3100 KW
- Avg. Monthly Power Generation: 600,000 KWH

- No. of Electrical Customers: ?
  - Avg KWH consumption/mo: ?
- No. of Vehicles: 685

- Power Generation ~ Daily Load Curve (output in kilowatts)



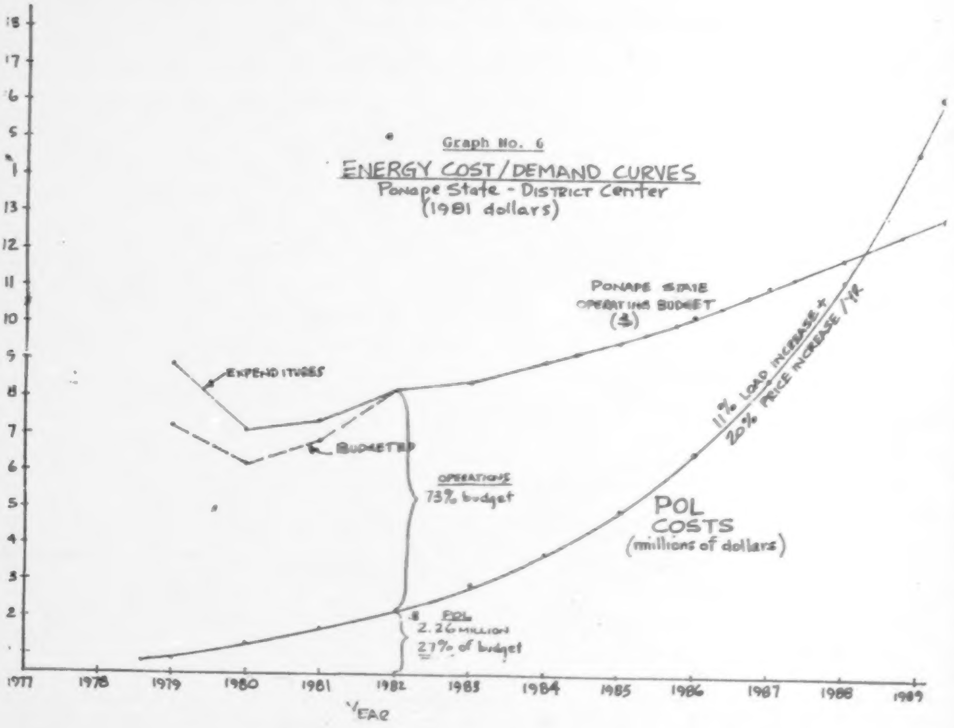
- Average Monthly Petroleum Consumption (gallons)

Diesel	MoGas	Jet Fuel	Kerosene	AvGas	LP Gas	Total
78,400	25,000	1,500 (est.)	3,300	3,000 (est.)	?	111,200

II.A.3. Energy Cost-Demand Curves

In establishing a 5-year energy program for each state of the FSM, an attempt is being made to present our governments with a longer term forecast of energy demand; and thus costs. Graph No. 6 depicts; (a) the relationship between expected energy costs and operations budgets for the State of Ponape. The forecast is a disheartening one. But the estimations do clarify the urgency of our situation, and the need to develop alternative sources of energy for the states combined with a rigorous energy conservation program.

Notes: In all states energy costs use up between 20% to 3-% of operating budgets. Fuel price changes have a dynamic impact on operating budgets. If we assume an 11% load increase and a 20% price increase per year, by 1988 POL costs will totally consume the operating budget for Ponape. While our estimates may be dempened somewhat by smaller demand increases and smaller price increases, the general picture remains unchanged for all states (Ponape shown here as an example). POL costs are now a most important factor in state budgets; in the future they will be more so. (See also Projected Fuel Expenditures, Table 2 below.)



II.B. Projected Fuel Expenditures

In early 1981 the FSM energy people attempted to estimate the total impact of raising fuel costs for 1982 budget purposes. Table 2. Projected Fuel Expenditures in the Federated States of Micronesia are working estimates in that analysis.

Table 2.

Projected Fuel Expenditures
Federated States of Micronesia (FY 1982)

	Governmental End Use	Federated States of Micronesia				Total FSM Expenditure
		Kosrae	Ponape	Truk	Yap	
$1.53	Power Plants	$355,000	$1,930,000	$1,440,000	$ 920,000	$4,570,000
	Field Trip Ships	-	370,000	550,000	180,000	1,100,000
	Other Govt Uses	75,000	180,000	150,000	110,000	515,000
	Total	$355,000	$2,480,000	$2,140,000	$1,210,000	$6,185,000

$1.70	Power Plants	$300,000	$2,140,000	$1,600,000	$1,020,000	$5,060,000
	Field Trip Ships	-	410,000	612,000	204,000	1,226,000
	Other Govt Uses	80,000	204,000	163,000	122,000	569,000
	Total	$380,000	$2,754,000	$2,375,000	$1,346,000	$6,855,000

$2.00	Power Plants	$350,000	$2,520,000	$1,830,000	$1,200,000	$5,950,000
	Field Trip Ships	-	480,000	720,000	240,000	1,440,000
	Other Govt Uses	96,000	240,000	192,000	144,000	672,000
	Total	$446,000	$3,240,000	$2,792,000	$1,584,000	$8,062,000

Recently, power plant cost estimates were re-estimated contrasting the power production of an estimated 36,000,000 kilowatt hours with 43,000,000 kilowatt hours (see production estimates Table 1.); 36,000,000 is 1980 production with growth held constant, 43,000,000 is our estimated real growth in demand by 1982.

FY '82 Power Generation Costs (POL)

Kilowatt Hrs Produced	Diesel Fuel Costs:		Total POL (Costs with Lube Oi
	$1.40/Gal	$1.50/Gal	
36,000,000	$4,200,000	$4,500,000	$4,700,000
43,000,000	$5,000,000	$5,400,000	$5,600,000

These re-estimations have addeda little over $1,000,000 to the fuel costs estimates presented in Table 2. Also, for simplicity in analysis we used $1,50 instead of $1.53/Gal. This procedure would add slightly to the projected fuel costs if a comparative analysis had been completed. The figures have been left in the form of our original calculations to give some indication of the sensitivity of the total cost to per gallon price increases.

III. ENERGY PRODUCTION COSTS, CONSUMER COSTS, COLLECTIONS

III. A. Power Production Costs

Power production costs are greater than the fuel expenditure costs presented in the tables above. Power production costs include operation and maintenance costs. The estimates of power production costs for each state per kwh are: (a) Ponape 17 - 20¢, (b) Kosrae 17 - 20¢, (c) Truk 17¢ and (d) Yap 17 - 20¢ with an FSM average of 18¢/kwh Total power generation costs for FY 1982 (43,000,000 kwhrs x $0.18) are $7,729,000. Total estimated costs for 1982 will be $8,640,000 or (47,800,000 kwhrs x $0.18). These estimates assume 18¢ as averaged cost constant over the next two years. Actual costs may be higher if increased efficiencies of operation do not offset raising fuel costs.

It should also be noted that these power cost estimations do not include front-end capitalization costs or a sinking fund for spare parts, new generators or system alterations.

III.B. Consumer Costs

The power cost charged to consumers in each state is as follows:

1. Kosrae: For consumption less that or equal to 35 kwhrs/month a flat rate of $1.00. For consumption greater than 35 kwhrs/month a charge of 3¢/kwh is charged.
2. Ponape: For consumption up to 1,000 kwhrs/month, 3¢ a kwh is charged. Monthly consumption over 1,000 kwhrs is charged at 8¢/kwh.
3. Truk: Commercial and business consumers are charged at 10¢/kwh. Private residents are billed at 6¢/kwh. Government quarters receive no charge for the first 1,000 kwhrs, 6¢/kwh for consumption between 1,000 and 2,000/kwhrs/month, and 9¢/kwh for monthly consumption exceeding 2,000 kwhrs.
4. Yap: Users are charged 5¢/kwh for consumption at 1,000 kwhrs/month or less; 7¢/kwh for monthly consumption over 1,000/kwhrs.

Note: Changes to the above rates are being proposed in all of the states, but no legislation has yet been introduced. However, it should be noted that the governments use more than half the energy produced in each state, and since very few of the government buildings, departments or offices are metered and/or billed, there will be minimal revenue impact and less than effective conservation measures applied as a result of increased kwh charges. Price increases will primarily impact the private and commercial sectors' energy use and these are the sectors most in need of financial incentives for economic development and growth.

III.C. Collections

All of the data necessary for an analysis of collections is not available. The following table, however, sketches a general pricture (except for Yap) of the progress of state efforts to increase collections. On Yap, a new collection system has been organized and supported by the government that will ensure a higher percentage of revenue collected in proportion to total amount of power revenues billed.

Table 3.

FSM Consumer Collections on Average Monthly Production
First Quarter FY 1981

COLLECTIONS

MONTHLY	KOSRAE	PONAPE	TRUK	YAP
Number of Connections	175	800	600 (est.)	472
Average Production, Kwhs	180,000	1,100,000	950,000	640,000
Average kwhrs Billed	50,000	500,000	-	-
Average Amount Billed	$ 1,700.00	$ 102,000.00*	$ 14,000.00	-
Average Amount Received	$ 600.00 (est.)	$ 20,000.00	$ 9,400.00	-

*Includes delinquent accounts.

IV. KOSRAE HYDRO-ELECTRIC PROJECT

The House Committee on Interior and Insular Affairs proposes that $500,000 be budgeted for a feasibility study on building hydro-electric plants in Kosrae and Palau. (Such a study was funded last year for Ponape.) The need for alternative (non-petroleum based) power generation in the FSM is critical, undeniable. We would suggest, however, that the language for such an appropriation be changed to read "...feasibility studies and development". This would give the FSM government (Kosrae) an option to go ahead and build a hydro-electric plant with the appropriation instead of conducting another study. Two studies have been completed for Kosrae, FSM engineers believe these studies are adequate. A personal letter from Governor Nena (Kosrae) to the FSM Budget Officer explains in more detail the activity we would like to be considered for appropriations, dated April 16, 1981.

> In consideration of the 1982 Budget Hearings in Washington in May 1981, and pertaining to hydroelectric development funding on Kosrae, I wish to provide a brief outline and justification of our view toward small scale hydroelectric development on Kosrae.
>
> Presently Kosrae produces about 200,000 Kwhr of electricity per month to provide power to the private, commercial and governmental sectors. The present cost of this electricity is 20¢/Kwhr. This cost to all consumers is heavily subsidized by the government. Were it not, electrification of Kosrae by present means would be economically impossible. Even now fuel costs are consuming a significant portion of our operating budget.
>
> The planned CIP Power Line Extensions to Malem (130) households, Utwe (90 households) and Tafunsak (130 households) villages will in time raise demand on the existing diesel based generating system to 50% above present levels. This financial and technical burden would be borne chiefly by the state government. Therefore, any further increase in demand as a result of rural electrification must be supplied and limited if necessary by what indigenous energy resources are available on Kosrae. Kosrae cannot afford further diesel based electricity development.

There has already been two feasibility studies conducted on Kosrae's hydroelectric potential; Pacific Architects and Engineers (1977) and Architectural Energy Systems (1981). PAE's report dealt with relatively large hydro systems that were designed to develop 100% of the available hydro potential where "economically" advantageous when compared with diesel fueled generators. Three disadvantages to PAE's approach are the length of time to implementation, the cost (both for the necessary civil works and the transmission lines needed to tie these systems into our existing grid), and the cultural/environmental impact (resulting from the use of the entire stream flow from the headwaters to the power house side on the main road). Projects on the order of $700,000 per hydroelectric installation with $100,000 going to engineering were proposed by PAE. This resulted in installed cost exceeding $10,000/Kw.

On the other hand hydroelectric development could be implemented in Kosrae immediately with the local population gaining valuable experience in the construction and operation.

Preliminary findings of the AES report identify a number of local streams with existing concrete dams built by the respective municipalities and the District government in the 60's to provide for community water jointly for specific villages. Due to materials on hand at the time, many of thes sites utilize 8" to 12" steel pipe with a potential energy of 10 CFS far in excess of the existing village needs (.05 CFS).

At two of these locations the existing 12" water pipe could be utilized to deliver 3 to 4 CFS for hydroelectric production while continuing to provide sufficient drinking water to the village for existing and future needs.

Utilizing these existing dams and penstocks would greatly reduce the construction cost and time, and, as access rights are already established, minimize the legal and institutional barriers faced by larger systems. These systems could provide from 20/30Kw of continuous electric power to villages who now have no electricity at a cost of less than $3000/Kw. At the same time it would eliminate the immediate need to run miles of high voltage transmission line necessary to tie these villages into the central grid. Thus with funding on the order of $75,000 - $100,000, small community based hydroelectric projects can be designed and built.

The installation of small scale hydroelectric units does not limit the available power from each stream as these systems would be designed to operate on a fraction of the average stream flows or about 25 - 30% of the average flow. They would utilize flows that are exceeded at least 85% of the time and therefore have a fairly constant energy production. Management of the power would be easier and overall costs/Kwhr reduced. If at some later time peaking capacity is needed and deemed economically sound, dam enlargement or new dam construction could be under taken.

The PAE and AES reports are technically in agreement about flow and head values. The approach to development is somewhat different. Kosrae needs hydroelectric systems for demonstration, experience and energy. We need them as soon as possible. Rather than allocate scarce funds for feasibility studies, we elect to persue funding for design, construction, and operation. To that end I urge the FSM planning and budget people to lobby on our behalf for small scale community based hydroelectric systems.

V. ENERGY, TECHNICAL SERVICES ASSISTANCE

With completion of 5-year state energy plans in July-August 1982, the FSM National Government faces the immediate need to directly assist state efforts to conserve energy and to provide energy production.

The most dynamic method by which FSM may assist each state's energy development efforts is through Applied Technical Services. In the past all field technical assistance for power generation and transmission systems has come from the T.T.P.I. Headquarters. Due to the distance and political remoteness of T.T.-Saipan, this support has been effective only in providing for large scale designs and large scale solutions. Day to day, village level, community directed technical assistance has not been readily available.

Within the private sector there are no engineering/technical service companies. Critical technical needs in each state have been resolved in the past by calling on T.T.-Saipan and invariably Saipan has provided FSM with "experts from afar". The states must now turn to FSM and the FSM must now provide technical support and guidance by establishing a Technical Services Group.

A technical Services Group would be in day to day contact with the decision makers and the citizens of the FSM. Too often, decisions are forced to be made without good technical advice; for example, evaluation and advice concerning feasibility studies for hydroelectric, wind, or solar energy development.

FSM needs to address the transfer of these technologies at the community level. These "communities" are FSM's major cities of the future; Lelu, Kolonia, Moen, and Colonia. The ability for the states to develop, operate and maintain a variety of technical systems is crucial to their quest for independence. Therefore a FSM based Technical Services Group will also be involved in technical training through demonstration projects and courses in the FSM school systems.

The FSM centers as well as outer atolls have already initiated numerous self-help development projects that are in critical need of technical guidance and/or minimal funding. These systems include wind system projects, solar water heating, alcohol stills, solar crop drying, coconut oil processing and utilization, solar cell installations, small scale hydroelectric, wind powered pumping, methane digesters, fish meal fertilizing plants. In addition, there are a myriad of small self-help, community based projects in which individuals have expressed sincere interest and in many cases already started development. There are several projects which have been funded through grants, but because of poor technical support and/or instruction, these small projects have failed. Many are directly in the line of economic development. What has been lacking for project success is a "hands on" field technical direction and advise. This is difficult to coordinate from Saipan because of the great distances to everywhere which means (a) mail and information flow take forever, (b) state energy personnel often don't know who or where to locate technical assistance within the U.S. and thus (c) many of the most ambitious people have neither the ability nor the patience to do the administrative work to tap into outside information sources.

In order to initiate an FSM based program of technical assistance we seek $100,000 in assistance to provide technical services to community or individual based projects, and to assist the state governments directly in the area of public services. There is much that can be done with money planted in the right soil. There is no better place to provide technical input, guidance, and advice than where the projects and people are working. FSM needs to guide development and training, and the states need assistance.

We would like to establish a fund for state technical energy assistance. This fund would be used to front-end retrofit, conservation and alternative energy production projects for all states. The funds would not be utilized as full grants. Rather estimated energy savings based on the cost differentials between existing consumption and conserved consumption (or between alternative system power generation costs, and diesel generation costs) would be used as pay backs to the general fund. The estimations of these pay backs would be agreed to by the states and national government prior to the investment.

APPENDIX I

FSM 5 YEAR ENERGY PLAN OUTLINE
1/16/81

The first work effort toward a comprehensive Energy Plan will be to document the present energy consumption and use practices. Based on inflation, petroleum cost increases and past growth, projected energy costs and problems will be presented to each state government in an effort to document and educate State and National Leaders about their respective energy problem.

I. ASSESSMENT OF CURRENT ENERGY PRODUCTION/CONSUMPTION SYSTEMS

A. ELECTRICAL POWER GENERATING SYSTEMS for DISTRICT CENTERS and SPECIFIED OTHER LOCATIONS.

1. Equipment and General Plant Operating Conditions.
2. Load Curves as Obtainable from Operator's Log Books
3. Machinery Efficiencies (thermal)
4. Reliability of Electrical Power
5. Transmission Systems
    a) Present conditions and operational efficiencies, design problems, etc.
    b) Expansion plans
    c) Cost per mile of main line installation.
6. Existing Power Plant Capacity Increase Plans
7. Actual Cost per Kilowatt-hour Figure, based on amortized capital costs of machines, plant, transmission system, labor, maintenance, etc.
8. Kilowatt-hour Production Statistics on monthly basis
9. Fuel Use Statistics
    a) Use of diesel, gasoline, kerosene, etc. as collected from Mobil Oil and government/private receipt records.
    b) Use by sector-government, private, commercial

B. TRANSPORTATION SYSTEMS

1. Number of Automobiles/Motorcycles, historical trends
2. Number of Outboards/Boats, Historical trends
3. Business Sector Transportation/Heavy Equipment Bulldozers, tractors, trucks, etc.
4. Public Transport-taxis, both land and water

[illegible]

II. FUTURE ENERGY GROWTH/DEMAND ACCORDING TO PAST TRENDS

A. POPULATION GROWTH

1. District Center, Atoll-concentrations, past/present future migration patterns
2. Energy/Household, Average energy consumption per consumer (government, private, commercial)

B. POLICY FOR ELECTRIFICATION-NON INDUSTRIAL AREAS, PLANNED INDUSTRIAL CENTERS

1. Atoll Electrification-by number people and demand priorities (lights, communication, central refrigeration, dispensary, services, etc.)

2. Economic Realities to Rural Electrification-petroleum based electric production, alternative/appropriate energy technologies.

C. FUTURE COST/DEMAND ANALYSIS

1. Electrical Energy Usage by method.
    a) Hot water-number and consumption
    b) Cooking
    c) Lighting
    d) Air conditioning-number and consumption
    e) Refrigeration

2. Projected Future POL Costs

3. Projected Future Energy Demand

4. Projected Capacity Demands (Peak Load Curves)

NOTE: Items 2, 3, and 4 to be published with necessary reports outlining present electrical energy costs and the future economic burden on each State Government. These reports are to be sent as soon as possible to each State Government as an educational tool toward conservation and energy problem awareness.

D. INDUSTRIAL ENERGY REQUIREMENTS

1. Business Growth-private/government sector

2. Types of Energy Required.
    a) Electrical
    b) Hot air
    c) Hot water
    d) Mechanical
    e) Cooling-freezing

3. Industrial Area Development and Demand.

The second portion of the FSM Energy Plan will be to propose and detail. Energy Development Options to include CONSERVATION, ALTERNATE FUELS AND RENEWABLE ENERGY TECHNOLOGIES

III. ENERGY DEVELOPMENT OPTIONS-NON RENEWABLE

A. PETROLEUM BASED

1. Electrical Production Cost Estimates-Based on world projection of cost increase and supply availability of:
    a) Diesel
    b) Bunker C-heavy oil

2. Engineering Cost Estimates for Modification of Present Diesel Systems to Heavy Oil (bunker C) units. (i.e., - Marshall Islands)

B. COAL

1. Engineering Cost estimates for Conversion of Present Electrical Power Systems to be Coal Fired. Includes docking, fuel storage, and fuel handling systems.

2. Small Coal Fired Boiler Efficiencies and Costs/Kwhr of Electricity.

3. Environmental Aspects

4. Long Term Supply-Ability to meet all island needs. (Australia)

C. OTHER (Nuclear, Fission, Fusion, etc)

IV. RENEWABLE ENERGY OPTIONS

A. CONSERVATION-Projection of realistic conservation goals per consumer to project goals.

1. Architectural Standards/Codes
    - a) Specific Building Retrofit Designs (Specifically one for each government building-low cost)
    - b) New building (primarily government) environmentally appropriate designs.
    - c) Model housing

2. Equipment Electrical Efficiency Standards

3. Real Cost/Kwhr Billing
    - a) Regulated, organized, electrical energy subsidy program as economic development incentive and hardship cases exist.
    - b) Government section to be metered by Department.

4. Public Education Program

5. Legislation on Conservation Measures

6. Energy Audits

B. HYDROELECTRIC

1. Assessment and Development of small scale (< 20Kw) hydroelectric systems, community based.
    - a) Technical training and experience
    - b) Timelyness of implementation
    - c) Cost for Development S3000/kw.
    - d) Political, economic, social bureaucracy minimal.

2. Assessment and Development of Maximum hydropotential for central grid as funding and political problems are resolved.
    - a) Realistic project goals for hydrodevelopment.
    - b) Training and operation

C. WIND ENERGY SYSTEM DEVELOPMENT

1. Resource Assessment
    - a) Anemometer Data Aquisition from organized contracted FSM study with active local technology transfer
    - b) Wind Energy Maps
    - c) Previous Reports from JPL, NOAA, etc.
    - d) Predict goal for energy attainable from wind (each island)

2. Small System Installation and Operation
    - a) less than 20 kw
    - b) systems to be operated by schools (i.e. Xavier) under controlled situation
    - c) Projected development of independent community based owned and operated systems where resource exists and is best option of renewables

3. Large Central grid WES
    - a) Greater than 20 kw up to 200 kw systems
    - b) Technology transfer
    - c) Implimentation to follow small system experience

4. Atoll Wind System Development
    - a) As wind resource and technical abilities of local community are realized thru training on central island system
    - b) Cost analysis for atoll electrification and energy management

5. Pumping

6. Transportation
    - a) Sail assisted transport-interisland intralagoon
    - b) Sail assisted fishing vessels
    - c) Building and operating motoer sailing vessels for demonstration and research into economics and technical ability for such systems.

D. PHOTOVOLTOICS

1. Cost per Kwhr/Location Evaluation Primarily for Outer Islands and other remote sites where minimum critical power is needed (i.e. communication, nav. lighting. refrigeration for dispensaries

2. Future cost forecasting

3. System performance with special emphasis on technical training

4. Commercialization and manufacturing possibilities in FSM (Assembling and marketing solar panels to cut costs).

The follwing Renewable Options REQUIRE LOCAL RESOURCE Technical and/or social ASSESSMENT for support.

E. BIOGAS

1. Technical Evaluation of Biogas Designs
    - a) Thermal efficiency (i.e. fuel value as fertilizer vs electrical or heat energy source).
    - b) Complexity of systems

2. Demonstration Projects-small scale

3. Assessment of Development Potential for individual community or home uses.

4. Social/Economic Development Obstacles

F. DIRECT BIOMASS COMBUSTION/GASIFICATION

1. Technical Evaluation of Biomass Commercially Available Systems.
    - a) Thermal efficiency and fuel value comparison (i.e. wood as building product vs fuel, etc.)
    - b) Complexity of technology

2. Demonstration Projects-small scale

3. Demonstration Projects large scale

4. Assessment of Fuel Source Supply and Replenishment (i.e. wood chips, scraps, bagasse, industrial waste)

5. Assessment Large Scale Development for Electrical Power Production.

6. Steam Boiler/Turbine Generator Systems
    - a) Fired with biomass
    - b) Efficiencies
    - c) Complexity of operations
    - d) Cost appraisal of this technology as a replacement for internal combustion engines.

G. ALCOHOL PRODUCTION

1. Feed Stock Availability and Cost

a) Bagasse
b) Taro
c) Tapioca (Kasava)
d) Yams

2: Medium scale industrial production unit for alcohol export to other islands and as local fuel source.

H. LIQUID FUELS

1. Coconut Oil (Crude and refined)
   a) Tests on diesel/gasoline engines for suitability of coconut oil as liquid fuel.
   b) Outer-island motor/sail transport motor power fuel source.
   c) Central energy production-limited basis-outer-island freezers, etc.
   d) Resource/potential supply
   e) Cost/gallon/kwhr.
   f) Oil burning lamps especially suited for coconut oil.

2. Oil producing Trees-Test programs to be initiated within Agriculture station each state.

3. Alcohol with high percent water (20% +) as fuel source in high compression engines.

I. SOLAR PONDS

1. Assess Technical feasibility with respect to environment.

2. Cost Analysis

3. Demonstration projects.

The following items may have FUTURE POTENTIAL but research in useful size systems requires large capital investment.

J OTEC

1. Maintain Information Links with World Development.

2. Present State of Art/Cost/Technical Developments.

3. OTEC as an Economic Development Project (export power via hydrogen)

K WAVE/TIDE

1. Resource Assessment

2. Large/small scale design possibilities

3. Maintain good information Links with world development.

L. SOLAR ENGINES

M. HYDROGEN

The third and final portion of this outline which is critical to the FSM Energy Plan is its IMPLIMENTATION.

IMPLIMENTATION OF ENERGY DEVELOPMENT PLANS

A. FSM ENERGY DEPARTMENT-Primarily procures and administers funds to projects and plans that are in accordance with the FSM Energy Plan and FSM National Energy Policy and Goals. Monitors these project developments and [illegible] [illegible] [illegible] bringing FSM towards complete energy [illegible].

1. [illegible] [illegible] [illegible] [illegible] wide program [illegible] [illegible] Energy Development Plan.

2. Technical Services [illegible] [illegible] designs and technically supervises small scale development projects (i.e. mini-hydro, wind, solar, alcohol, producer gas, bio mass, etc. systems as well as energy conservation programs such as audits, retrofits, etc.)

3. Training Workshops

4. Demonstrations

5. Large Scale Energy Development Projects-contract project administration.

B. STATE ENERGY OFFICES

1. Coordinates functions in each state w/respect to energy development and utilization in line with State Energy Plans.

2. Performs audits, workshops, public awareness campaigns, statistical studies. Works with consultants on specific projects.

Attachment No. 2

MEDICAL REFERRALS

March 16, 1981

MEMORANDUM

TO : Yosiwo George, Secretary, Department of Social Services

FROM : Dr. Irwin & Dr. Bolte

SUBJECT : Prepaid Referral Plan

We wish to present a proposal to reconsider the way in which we handle outside medical referrals. At the present time the four states of the FSM are over-spending their referral budget by nearly a factor of 4. In FY-80 Truk, Yap, Ponape and Kosrae obligated nearly $1,000,000 for medical referral on a combined budget of about 1/4 that amount. Clearly there is a major problem with the way we are currently handling our medical referral patients.

Presently each state is supposed to have a Medical Referral Committee to screen out unnecessary referrals. We can only speak for Ponape State and can say with assurance that there have been very few referrals in the past two years which could not be justified on the basis of medical need. However, even so, we in Ponape overspent our referral budget by nearly 300% in FY-80. Ms. Lennettee Araki has put forward a set of proposals devised in consultation with the physicians at the Ponape State Hospital for further strengthening the internal controls on medical referrals. But, given the record at the Ponape State Hospital in the past year it is clear that the procedures advocated by Ms. Araki will not eliminate the problem of underbudgeting and overspending. Thus, it is not enough to strengthen the internal controls. We must also gain control of the actual referral cost at the place where the care is given.

It has been customary in the Trust Territory to refer most of our patients to either the Guam Naval Regional Medical Center or to Tripler Army Medical Center. With the end of the Vietnam war the capability of GNRMC has been reduced substantially and the bulk of our military referrals have been going to TAMC. Two classes of patients have been going to other institutions: renal (dialysis) patients to St. Francis Hospital in Honolulu and, recently, cardiac surgery patients to Letterman Army Medical Center in San Francisco. With the exception of St. Francis, all of these institutions are government Hospitals where traditionally, cost is of no importance and where patients will remain hospitalized longer than necessary as there is no incentive for prompt treatment and discharge, nor any incentive to provide out-patient care when possible rather than the vastly more expensive in-patient care.

In order to remedy this problem and to allow us to regain a measure of control over our referral cost we propose the following:

1. *Centralize all referral activity within the office of the Director, Bureau of Health Services. Centralize the referral budgets for all 4 States within this office.*

2. *Negotiate a prepaid, capitation contract to cover all FSM medical referrals with a single organization in Honolulu, e.g., HMSA, Straub Clinic, Queen's Medical Center, Kaiser or TAMC. The contracting organization would survey the FSM, study prior referral patterns, etc. and on this basis submit a bid to FSM to care for all referral patients for a set price for a specified period of time - probably one year for an initial contract, perhaps 3 years on renewal contracts. If the actual cost of care during the period of the contract exceeds the agreed amount, the contracting organization would accept the loss. Similarly, if the cost is smaller than the contracted amount they would retain the difference as a profit. Profit and losses to both parties would be taken into account whenever a new contract is negotiated.*

3. As part of the referral contract include provision for regular consultant visits in the various specialities and sub-specialties not provided for in Ponape. Consultant visits would be scheduled frequently, perhaps every 3 months in each specialty. The consultants would be provided by the contracting organization and the cost of the trips would be paid for under the referral contract.

   There are a number of advantages to establishing this type of consultant visitation. The physicians to whom the patients from the FSM would be referred would have the opportunity to become thoroughly familiar with the FSM, our patients, our medical capabilities and limitations and could provide valuable teaching to the MD's and MO's in the FSM. A regular schedule of frequent sub-specialty visits would eliminate the need for many referrals outside the FSM. Many subspecialty [illegible] covered by this mechanism thus avoiding the more costly recruitment, employment, housing, etc for permanent, resident sub-specialists. A regular frequent predictable and well publicized schedule of sub-specialist visits would encourage better utilization of these services. Patients would be less likely to be forgotten about as they frequently are now.

   Perhaps funding for this portion of a prepaid referral contract could be supported through a new TTHMDTP contract as the visiting specialists would be providing valuable teaching as well as direct patient service.

4. Institute the internal reforms proposed by Ms. Araki.

5. Except for true emergencies such as head trauma or chest wounds or other categories of immediately life threatening illnesses as may be determined by the Director, Bureau of Health Services, all potential referral patients should be sent to the Ponape State Hospital for evaluation by the appropriate physicians. If possible, treatment would be done in Ponape. Only on the recommendation of the Ponape staff would a patient be electively referred outside the FSM and then to the contracting organization.

6. Creation of an FSM Referral Hospital on Ponape with appropriate staffing and funding provided by the FSM. Staffing needs can be determined after careful study of the data compiled on our current referral patterns and the excellent analysis prepared by Ms. Araki.

In summary we propose the following actions:

1. Centralized referral policy at FSM level
2. Negotiate a prepaid contract for all outside referrals
3. Create a system of sub-specialty service within the prepaid contract ~~coverage~~ based on routinely scheduled visits by outside consultants
4. Institue strict internal controls on the selection of referral patients
5. Make Ponape the screening facility for all outside referrals except in the case of true emergencies
6. Create a well staffed and adequately funded FSM Referral hospital on Ponape.

If all of the above were accomplished the FSM would be able to provide the best possible care at the smallest possible cost. To continue with the present situation is financially untenable. We urge your serious consideration of these proposals.

Robert A Bolte, M.D.

TABLE 3. Average Cost of Medical Referrals to Tertiary Facilities, FY 79 and 80.

State/FY	Total Cost	Total Patients	# Pts. to Ponape only	# Pts. PNI/tertiary facility	# Pts. to tertiary facility only	# Attendents	Average Cost per referral
KOSRAE							
FY 79	35,111	41	29	2	9	19	856
FY 80	182,544	32	19	9	4	21	5704 (14,042)*
PONAPE							
FY 79	275,761	33	2 (Majuro)	n/a	24	16	8356
FY 80	292,824	42	n/a	n/a	12	13	6972
TRUK							
FY 79	527,240	92	7	1 (PNI/Guam) 1 (Saipan)	84	71	5948
FY 80	618,946	84	2	1 (Maj/HI)	85	71	7368
YAP							
FY 79	138,730	20	1	0	17	2	6936
FY 80	162,414	33	4 (Palau)	0	27	2	4922
TOTAL							
FY 79	976,842	186	39	4	134	108	5252
FY 80	1,256,728	191	25	10	148	106	6580

*Average cost of referrals to Kosrae (excluding those made to Ponape Hospital) = $14,042.

TABLE 1. Cost of Medical Referrals by Accounts, FY 79 and 80.

States/FY	113 Acct.	# Patients	VRS	# Patients	CCS	# Patients	Total Pts./ Fiscal Year	Total Cost by Fiscal Year
TRUK								
FY 79	$442,171	59	$70,227	21	$34,842	12	92	$527,240
FY 80	472,361	54	88,261	19	58,324	11	84	618,946
PONAPE								
FY 79	244,972	125	4,024	3	26,765	5	33	275,761
FY 80	207,283	131	14,075	2	71,466	9	42	292,824
KOSRAE								
FY 79	15,033	40	-0-[1]	0	20,078	1	41	35,111
FY 80	166,796	31	-0-	0	15,748	1	32	182,544
YAP								
FY 79	68,980	12	51,926	3	17,824	5	20	138,730
FY 80	119,898	23	25,788	7	16,728	3	33	162,414
TOTALS								
FY 79	771,156	136	126,177	27	99,709	23	186	976,842
FY 80	966,338	139	128,124	28	162,266	24	191	1,256,728

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[1] Kosrae participated in VRS effective FY 81.

FIGURE 1. Total Number of Medical Referrals by States, FY 79 and 80.

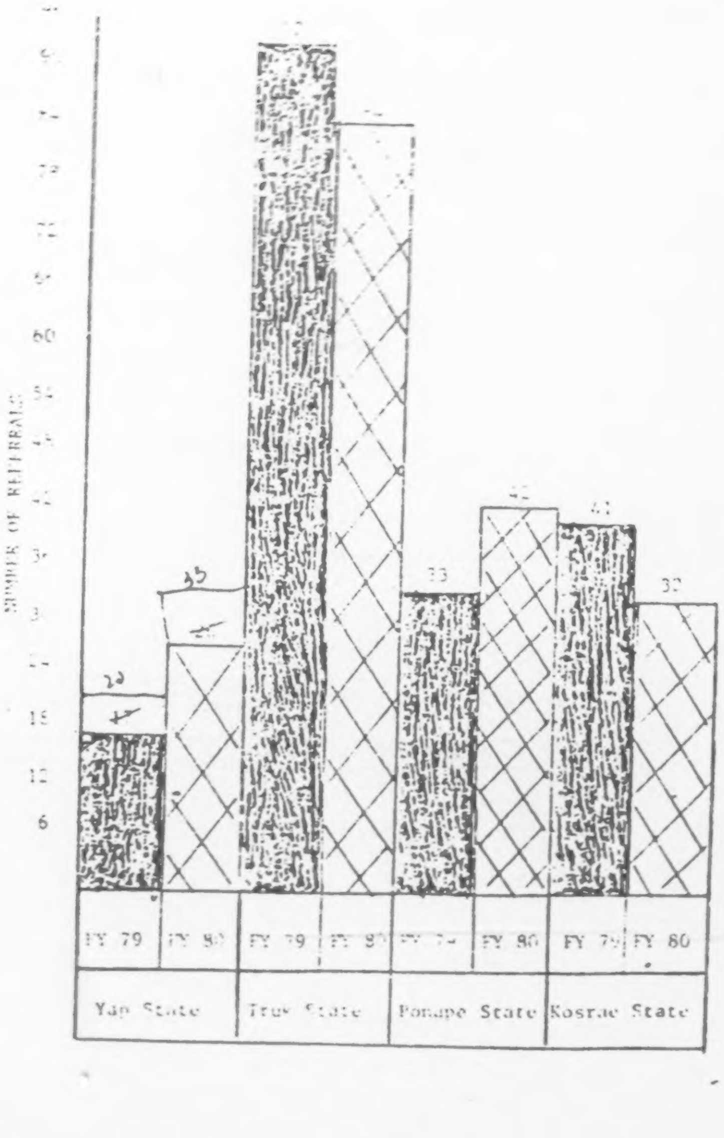
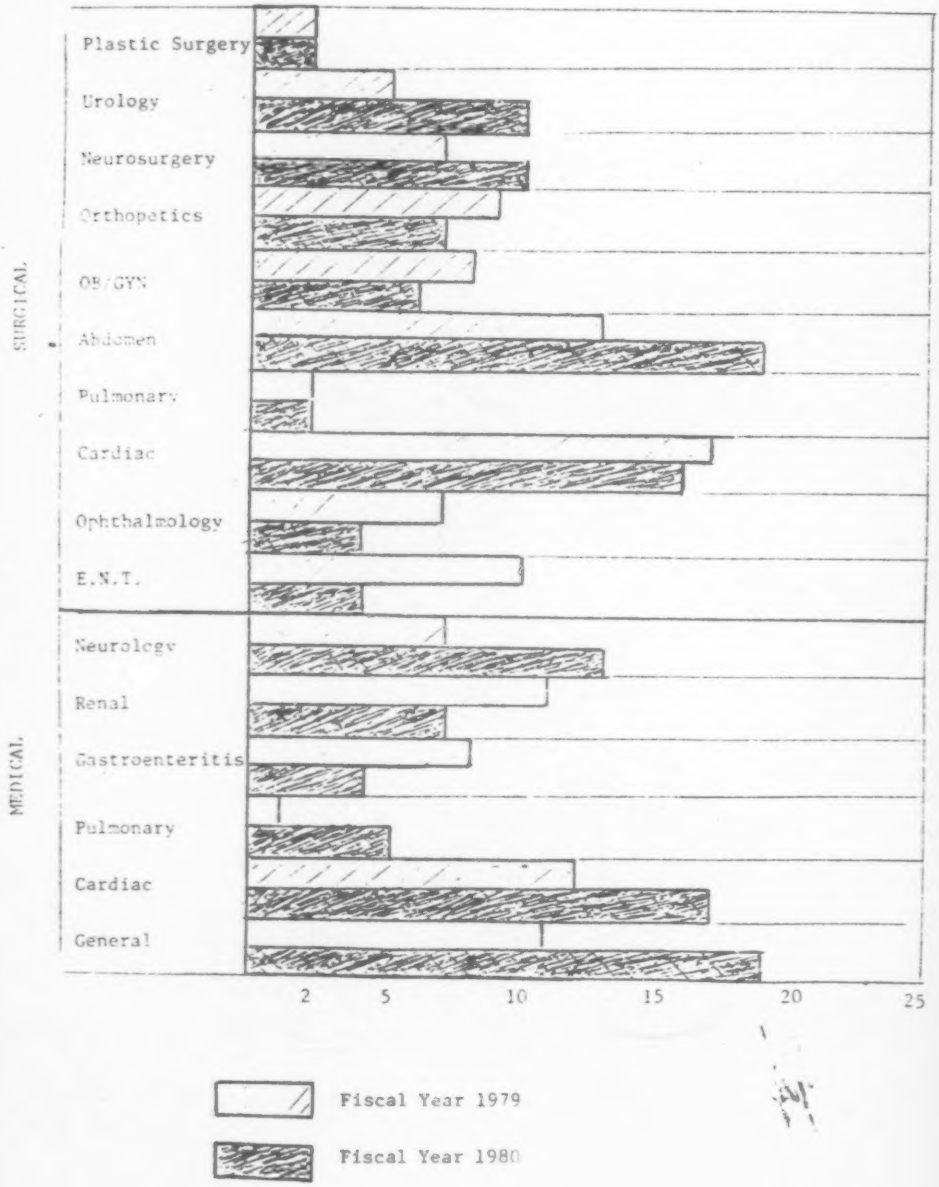


FIGURE 2. Classification of Medical Referrals: FY 79 and 80.



Attachment No. 3

FSM STATE REQUEST FOR DEVELOPMENT
AND CAPITAL IMPROVEMENT APPROPRIATIONS

FY 1982 CIP Budget Request:
State of Truk

SUMMARY LISTING

		Amount ($1000's)
CIP:		
1.	Ta Airport	$ 1,000
2.	Complete original scope of work designed for 1st Level CIP-Water, Road, Power, Sewer	3,000
3.	Lagoon and outer island water systems	2,000
4.	Faichuk Road	1,000
5.	Lagoon and outer island docks and channels	1,000
6.	Renovation of government buildings	500
7.	Truk seaport-public works, A&E study	50
	SUB TOTAL	$ 8,550
DEVELOPMENT:		
1.	Dublon Fisheries	$ 300
2.	Chicken broiler project completion	50
3.	Copra processing plant expansion	55
4.	Coconut replantation study	50
5.	Portable rock crusher	25
6.	Lagoon and outer island wind-powered plants	200
7.	Piggery project expansion	100
8.	Ferro cement fishing boat construction	500
9.	A&E Tol dry dock	50
10.	Food processing feasibility study	40
11.	Lagoon and outer island fish survey	200
12.	Lumber feasibility study	30
13.	Mariculture study	50
	SUB TOTAL	$ 1,650
	TOTAL	$10,200

DETAILED LISTING:

Capital Improvement Projects:

The state of Truk is the largest state of the FSM with an estimated 40,000 people scattered over four general geographic areas; the islands of the Truk Lagoon, the Mortlocks, the Western Islands including the Namonuito Atoll, and the Hall Islands. The CIP and development projects listed are directed both an and outer island development.

1. Ta Airport: $1,000,000: Ta Islands are in the Mortlocks, a series of atolls about 200 miles south of the Truk Lagoon with a total population of 10,000 people. The only transportation available to the islands now are the field trip ship services, available about once a month on an irregular service schedule. There is a need to increase passenger and commodity movement to and from the Mortlocks. Medical evacuation and search and rescue functions would also be better served by having a short runway on Ta. In addition, passenger movement from the Mortlocks to Ponape now must first go to Truk by ship, then to Ponape by air. When the island's air system is established passenger movement can go directly, Ta to Ponape with savings in total cost to passengers.

2. Complete Original Scope of OICC 1st Level CIP: $3,000,000: Current OICC construction will not, in most projects, provide facilities which can be used by the respective state governments. Some of these projects have been cut back as inflation and mobilization costs have increased. The additional expenditures for 1st Level construction will assist in completing road, water, power and sewer projects primarily on Moen in the Truk Lagoon.

3. Lagoon and Outer Island Water Systems: $2,000,000: Infection and deaths from waterborne disease remain a primary health problem for all the Truk Islands. A recent report on Moen, the state center, indicated that all wells were contaminated by sewage backup. In the outer atoll islands salt water intrusion and contamination remain a major problem. The required assistance would be used to upgrade all water systems; well and distribution lines on the Lagood islands, catchment basins and distribution systems on larger islands, cisterns for households and smaller villages, and clear water lens for atoll water systems.

4. Faichuk Road: $1,000,000: In the area of Faichuk there are four islands which run together in a series of mangrove swamps. There islands are Polle, Patta, Wonei and Tol. The agricultural potential for these islands is substantial, but at present access to the interior is blocked by mangrove swamps, and between islands overland transportation is now non-existant. A road around the island of Tol has been started by the Navy CAT teams. This road needs to be completed, and a road extending to the other primary islands needs to be completed.

5. Lagoon and Outer Island Docks and Channels: $500,000: Most of the outer islands and many of the Lagoon islands of Truk do not have docks or channels into the individual lagoons. This means that passenger and commodity movement must be taken by smaller boats from field trip ships to shore. For these islands, movement of construction material, food or even construction vehicles is slow, costly and inefficient, especially in adverse weather conditions. The financing requested will be used to finance dock construction and reef channel dredging throughout Truk, but will primarily focus on the outer islands.

6. Renovation of Government Buildings: $500,000: Truk government administration buildings are scattered around Moen.

Most of these buildings are in need of repair and maintenance. Some of these buildings are World War II Navy facilities that are rapidly falling apart. The substate centers in the Mortlocks and Namonuitoes are almost unsuitable for the administrative purposes they must serve. The requested assistance will repair existing facilities, and will build larger, new structures in the capital area in order to physically consolidate government operations.

7. Truk Seaport - Public Works A&E Study: $50,000: The Truk dock area has become so conjested that increasing inefficiencies of transportation, stevedoring and warehousing are occurring. The Truk public works area needs to be moved away from the immediate dock area to provide more warehouse and port operation functions. The assistance requested will be used for an A&E program of port planning and relocation of the public works facility.

Development Projects:

1. Dublon Fisheries: $300,000: The Dublon Fisheries Complex is the largest development project attempted on Truk. It has already begun with over $2.1 million being used to complete the dock on Dublon. Two feasibility studies have been completed, and the State of Truk has hired a full-time consultant to accelerate the project's implementation. The State and National government are jointly funding a project to investigate the possibilities of having a joint venture agreement with Japan or the U.S. The next step in the development program is to complete the detailed A&E work on the facility complex, and establish water, power and sewer access to the site. The assistance requested will carry the plan into its next phase. The lack of additional funding will halt project progress at the end of this fiscal year.

2. Chicken Broiler Project Completion: $50,000: Two years ago a commercial poultry production system was attempted on Truk. Like many projects, this effort lacked enough initial funding to get off the ground. The facilities were not completed, the process of procuring a continuous supply of young chickens was not established, and the existing stock of chickens had to be slaughtered when a shipment of chicken feed was delayed for several months. The assistance requested will complete the facility construction at original scale, set up a procedure for ordering young chickens, establish a stable feed supply system and establishing processing activities associated with the marketing and sale of the broilers.

3. Copra Processing Plant Expansion: $55,000: Following a United Nations feasibility study, the FSM Copra Processing Authority allocated $100,000 to the establishment of a copra plant on Moen, Truk. The Truk State Legislature also contributed $55,000 to this project. The FSM is now in the process of hiring an expert to construct the mill and run its operations. Products from this mill in the form of soaps, cooking oil and copra cake will be used locally. The assistance requested will add an additional crusher to the complex for increases in production and increases in the quality of oil produced.

4. Coconut Replantation Study: $50,000: Increases in the coconut processing capability on Truk, a potential increase in the use of coconut oil to run outer island diesel engines for power generation, the continued demand for copra in Japan, and the existing deteriorated state of most coconut production areas point to a need to replant an adequate number of trees to ensure that Truk continues to receive the supply of coconuts necessary to keep production on the planning target.

5. Portable Rock Crusher: $25,000: Many of the villages and municipalities have the need to use crushed rock for small construction projects. Truk would like to purchase a small rock crusher that can be moved from village to village on the high islands and allow villagers to clean fields, gardens or existing rocks, and use the output for roads, paths, house foundations, construction materials.

6. Lagoon and Outer Island Wind Power Plants: $200,000: The cost of diesel oil landed on some of the outer islands of Truk is now $3.50/gal. The raising prices of carbon-based fuels make power generation on the outer islands too costly a proposition. Yet these islands do need power for communications, lights, mechanical energy, food refrigeration and freezing. The requested assistance would establish wind powered electrical generators on outer islands to help provide the power required for these functions.

7. Piggery Project Expansion: $100,000: The State of Truk has initiated a pig multiplication project which will help improve the existing stock, and will increase the number of pigs available for local consumption. An expert on artificial insemination was brought in in order to provide a method to transport sperm to Lagoon and outer islands without having to go through the costly and time consuming process of transporting boar pigs by small boat to these islands. The upgrading of the local pig stock by this process will have a dramatic impact on local production. The process now started needs to be expanded. The financial assistance requested will be used to bring in more stock for breeding purposes, improve and expand existing operations, and expand agricultural facilities to hold stock in the central facility.

8. Ferro Cement Fishing Boat Construction: $500,000: Several years ago a ferro-cement passenger and transport boat construction project was begun on Moen. This production unit constructed a number of medium sized vessels now used in the Truk Lagoon, and for transportation to the Hall outer islands. The production has now closed down, though the facilities, and many of the skilled workers who participated in the initial project remain on Moen. This financial assistance requested will renovate the old production unit, re-organize its operation, re-design molds and plans to allow for the production of fishing boats, purchase initial materials, and provide for operating capital until the project can get off the ground.

9. Tol Dry Dock, A&E: $50,000: The FSM currently issues fishing permits to Japan, Taiwan and the United States. There are four Micro-class field trip ships operating in the four states. In addition, a larger number of fishing and transport vessels operate in and around the Truk Lagoon. The construction of the Dublon fishing complex will increase the need for local and foreign fishing fleets. Yet as an insular nation, the FSM has not developed dry-dock facilities capable of handling medium and large vessels. Dry docking requirements in the FSM are now completed in Japan or Papua New Guinea. The financing requested above would complete the detail plans of a dry dock facility on Tol, in the Truk Lagoon. This project has already been started by private interests on Tol, but the lack of adequate financing and technical assistance has halted progress.

10. Food Processing Feasibility Study: $40,000: At present there does not exist a food processing industry in the FSM. This presents a problem because the preserved items, primarily canned fish and meats, are needed in the local areas where refrigeration is not available. In addition, fish for export can become a viable industry if a processing plant were to be established. The assistance requested would provide for a study on what type of food processing could feasibly be supported on

Truk given: (a) local production/consumption trends, (b) available export markets and (4) complementarities with planned processing units on Yap and Kosrae.

11. Lagood and Outer Island Fish Survey: $200,000: Fishing in the lagoons of the outer islands is at present a subsistence activity. Facilities for storage, access to commercial markets and centralized fish processing plants now being planned do not exist. Now commercial fishing or expanded local fishing is being planned. In addition, open ocean fishing for migratory species is increasing, increasing the need for foreign vessels to enter shallow waters to gather bait. Before we begin a planned expansion of fishing in the outer island atolls a careful study must be made of that resource. Over-fishing or exploitation of the resource can easily occur with tragic impact on island peoples dependent on the ocean lagoons for long-term protein supply.

12. Lumber Feasibility Study: $30,000: The FSM receives most of the lumber used for construction from New Zealand-Australia, the U.S. or Japan. Local supplies have not been developed to secure a sustained yield, nor have local production capabilities been developed. Preliminary investigations have identified the possibility of establishing a wood processing facility in the Lower Mortlocks. Logs would be brought up from Papua New Guinea, milled and dried in the Mortlocks and distributed throughout the FSM. This activity would reduce the cost of sawn lumber, and provide the people of the Mortlocks with an export industry.

13. Mariculture Study: $50,000: The request for assistance in Truk to determine the feasibility of developing lagoon and shallow waters for mariculture is an attempt to make the ocean resources more productive. Mariculture to any extent, either for export or for local consumption is not practiced in the Truk Lagoon or outer islands. If outer island people are going to be able to stay on the outer islands, rather than migrate into district centers, commercial mariculture industries must be established.

FY 1982 Budget Request
State of Ponape

SUMMARY LISTING

	Amount ($1,000's)
CIP:	
I. Power and Water	
1. Diesel Generators	$ 787
2. Power Plant Building, Fuel Pipeline	175
3. Wind/Solar Power, Outer Islands	250
4. Kolonia Water System Improvements	800
II. Transportation	
5. Airport Terminal	1,000
6. Circumferential Road	416
7. Outer Island Airstrips	250
8. Outer Island Docking Facilities	250

SUMMARY LISTING

	Amount ($1,000's)
III. Health and Education	
9. Kapingamarangi Dispensary	60
10. Junior High Schools (Phase I)	310
11. School Buses/Flatbed Trucks	69
IV. Other	
12. Freezer/Cold Storage Facility	1,500
13. Heavy Equipment	333
DEVELOPMENT:	
V. Development Projects	
1. Pig Multiplication Center	55
2. Coconut Hybridization	146
3. Food Processing	300
TOTAL	$6,701

DETAILED LISTING:

I. Power and Water

1. Diesel Generators: $787,000: At the present time, ponape has two power plants, one in Kolonia which contains two White Superior generators rated at 750KW each, and three Caterpillar generators of 500KW each, and another in Nanpohnman, several miles from Kolonia, containing three Caterpillar generators of 800KW apiece. This request is for two 800KW Kato generators to provide additional electrical generating capacity. The additional generators are needed because at present, Ponape is suffering from an abominable power situation with constant power outages. Additional capacity is needed because of rapidly growing demand associated with the establishment of Ponape as the location of the FSM National Government. In addition, a number of development projects will be initiated in the very near future which will increase electrical demand considerably. The new generators will serve to keep abreast of demand in the interim until hydro-electric power can be developed.

2. Power Plant Building, Fuel Pipeline: $175,000: The two large White Superior generators are being moved from the Kolonia plant to Nanpohmal, and the new requested generators will also be located at the Nanpohnmal site. To house the four generators will require an addition to the building as well as a pad. To supply the central power plant, a two inch pipeline is needed from the Mobil bulk plant to the Nanpohnmal site.

3. Wind/Solar Power, Outer Islands: $250,000: At present, the only power on the Outer Islands is provided by a small solar cell which barely supplies enough power for communications with the state center. This request is for the erection of a 1.5-5KW wind generator on each of the Outer Islands. With a 12 - 15 mph wind, this is capable of powering communications, a refrigerator in the dispensary, and a minimum of lights. It is possible that this could pave the way for universal lighting and perhaps a community freezer unit. But the primary purpose is to provide experience in energy management with the creation of this system. It is also desirable to go with a wind/solar combination, with the output mix depending upon the availability of the wind resource. Therefore this request also includes the cost of solar panels on each Outer Island.

4. Kolonia Water System Improvements: $800,000: At present, water has to be turned off three nights each week in Kolonia because the water system suffers from a number of inadequacies, leading to insuffucient production. Funds requested are to take care of immediate improvements. These include replacement of inoperative pumps, provide a more permanent enclosure for the chlorinator and its components, provide perimeter fencing at the treatment plant, provide a new 12" waterline from Ipat Tank to PICS, and the replacement of some leaky lines. These improvements are necessary to prevent local outages from insufficient production and to upgrade the operation of the water treatment plant.

II. Transportation

5. Airport Terminal: $1,000,000: Ponape's present airport terminal building consists of a structure that is nothing more than a concrete slab with a leaky roof. The structure has no walls, no security facilities, no functional restrooms, nor any of the other facilities required at a modern airport. A terminal building is needed which includes arrival and departure areas, airline ticket counters, space for quarantine, immigration, customs, a food concession, a handicraft shop, fire protection, office space and other related activities, such as space for the Tourism Commission.

6. Circumferential Road: $416,000: The construction of a circumferential road around Ponape is proceeding apace of funding. The project is being constructed by the Ponape Transportation Authority, a quasi-government agency. In FY 1981, $3,122,000 was appropriated for this project, an amount which was to fund the construction of 12 miles of road during FY 1981 and FY 1982. However, $416,000 was reprogrammed from the circumferential road project to cover additional paving of roads in Kolonia town not covered by the original scope of work. This request is for the restoration of these reprogrammed funds.

7. Outer Island Airstrips: $250,000: The construction of airstrips on the Outer Islands of Ponape State has been ongoing for a number of years with appropriations from the Congress of Micronesia/FSM Congress and the Ponape State Legislature. The construction has been done almost totally by hand due to the extreme difficulty, if not the impossibility, of utilizing modern earth-moving equipment on these atolls. The airstrips are needed primarily for emergency medical evacuations, although it is envisioned that the airstrips will be utilized for a number of other purposes, such as mail and limited cargo. Regularly scheduled air service is not anticipated at this time. Instead, the purpose is to establish the minimum acceptable runways to cover medical emergencies. It is very expensive to divert the field-trip ship in the event of such an emergency. The construction of these airstrips will help improve the reliability and efficiency of the field-trip ship service, as well as providing more timely evacuations in the event of an emergency. There also already is regularly scheduled air service to Kosrae by PMA, so construction of the airstrips on the two Eastern Islands of Mokil and Pingelap could serve as emergency field in case of engine trouble, and the use of their airstrips could easily be dovetailed into the existing operations of PMA.

8. Outer Island Docking Facilities: $250,000: Infrastructure to facilitate shipping operations is desperately needed in the Outer Islands. At present, the field trip ship must run the engines continuously while calling at the islands of Mokil and Pingelap in order to maintain its position, as there are no docking or mooring facilities. Loading and unloading are accomplished by small boat while the ship is underway. For Mokil and Pingelap, mooring buoys are needed at which the ship can tie up while calling at the islands, as the physical nature

of the islands seems to rule out the use of docks or wharves. Ngatik needs a dock inside the lagoon at a site adjacent to its airstrip, and Kapingamarangi and Nukoro need dock extensions so the ship can tie up directly at the dock. The atoll of Oroluk requires a pier inside the lagoon. These docks can serve as part of the infrastructure necessary for the establishment of a viable, small-scale fishing industry in the Outer Islands.

III. Health and Education

9. Kapingamarangi Dispensary: $60,000: The Dispensary at Kapingamarangi was destroyed by a typhoon in 1979. Since that time, medical care on this Outer Island atoll has been dispensed from a delapidated wooden shack which is simply not suitable for this purpose. This request is to provide a dispensary of Hill-Burton specifications.

10. Junior High Schools: $310,000: This request is to implement Phase I of a Junior High School Program on Ponape. At present, Ponape's secondary school system comprises one high school that accommodates less than half of the eighth grade graduates. (Schooling is universally available up to the 8th grade.) In order to increase educational opportunities, a Junior High School System is going to be established. This is far less expensive than the alternative of another High School. It is planned that a number of Junior High Schools will be established throughout the State. This amounts to building an extra classroom or two at some of the existing Elementary Schools. Thus 9th and 10th graders will commute daily to the Junion Highs, avoiding expensive boarding facilities and/or long bus rides to PICS. Eleven small Junior Highs are contemplated, with six on Ponape proper and one on each of the Outer Islands. The entire capital cost of the system is estimated at $1,500,000. However, only a few of the schools can be implemented in FY 1982 for classes to begin in School Year 1982/83. Therefore this request is only for the funds to construct 8 classrooms and to renovate two facilities into classrooms. These facilities were built for other purposes but have been turned over to the Education Department to use.

11. School Buses/Flatbed Trucks: $69,000: Regular school buses do not survive long on Ponape's rough raods. Out of the four buses purchased in 1978, only one is still operating. This request is for funding to purchase three heavy-duty longbed trucks and to put a cab and benches on the back to haul school children. The heavy-duty trucks are built to handle rugged conditions and will hold up better on Ponape's roads. This idea has proven to be viable and efficient on other Pacific Islands. These three vehicles can serve as an experiment with the concept.

IV. Other

12. Freezer/Cold Storage Facility: $1,500,000: A crucial item of infrastructure needed to support local fisheries development is a freezer of 50-ton capacity which can hold fish at a temperature of -20 degrees centigrade. The freezer is needed if any kind of local processing of fisheries products, such as a filet line or a fish meal plant to use in producing domestic animal feed. The freezer is also part of the infrastructure necessary to make Ponape a trans-shipment point for foreign fishing vessels. As a trans-shipment point, the freezer is needed to store the foreign fishing vessel's catch as they obtain fresh bait and stock up on water, provisions, and fuel.

13. Heavy Equipment: $333,000: Most of the State's heavy equipment is beyond repair, aged beyond its life expectancy in Ponape's tropical climate, and therefore out of operation. Practically the entire inventory of heavy equipment needs to be

replaced, but this request is limited to two pieces of the most needed equipment, a crane and a motor road grader.

V. Development Projects

1. Pig Multiplication Center: $55,000: In Ponapean culture and tradition, pigs have played an important role. Large quantities of pork are consumed and distributed during every feast. There is also a relatively high demand for pork for day-to-day consumption by both Ponapeans and expatriates, a demand which is presently begin satisfied through imports. The purpose of the project is to upgrade the overall quality of pigs on Ponape by introducing improved breeds. From the Pig Multiplication Center, pigs will be distributed to selected farmers for breeding as well as slaughter. The project will also provide artificial insemination and basic veterinary services. The funds requested here will provide the first two years of the Center's operation.

2. Coconut Hybridization, $146,000: Coconut is one of the most important crops in the Ponapean econonmy. In the form of copra, it is a major cash crop, and coconut also plays a pervasive role in the subsistence sector, as it is used for drinking, as food, for oil and cream, for pig feed, for utensils, for firewood, and for many other purposes. However, the coconut industry suffers from very low productivity. This project aims at increasing productivity through the propagaion of high-yield hydrid varieties. It will take considerable time until the benefits of the project are realized, as hybrid seednuts will have to be obtained, planted, and then evaluated. Experimentation with the local dwarf and tall parent lines will also be undertaken to produce hybrids. The goal of the project is to identify the high-yielding hybrids which are best suited to the varying climatic and soil conditions found in the State of Ponape.

3. Food Processing: $300,000: Approximately 50% of all the food imports into Ponape are food and beverages. Although these food imports comprise some commodities which are unlikely to be produced locally in significant quantities in the forseeable future, there are a number of foodstuffs which could be produced locally, or could be substituted for by local produce. If these local commodities are to ever substitute for imported foods, a food processing project is a necessity. Initially, the project will explore the possibilities of processing agricultural produce and fish on a commercial scale through a food processing laboratory and pilot processing plant. Later, it is envisioned that these activities will expand into a larger economically viable operation. This request is for funding for the first five years of the project. After that, the project may be turned over to the private sector.

FY 1982 Budget Request

State of Yap

SUMMARY LISTING

		Amount ($1,000's)
DEVELOPMENT:		
1.	Agricultural Development	$ 250
2.	Small Industries Development	1,100
3.	Fisheries Infrastructure	325
CIP:		
4.	Southern Yap Water System	1,164
5.	Energy	357
6.	Roads	1,000
	TOTAL	$4,196

DETAILED LISTING:

Capital Improvement Projects:

1. Cross-Island Road: 120,000: This rural farm road will run from the Lelu Harbor area over the mountain to Okat. It will open up the arable areas of the Innem and Okat River flood plains. This area was extensively used for agricultural production during the Japanese Administration. The new road will allow for expansion of the citrus production for export, and will give new areas for vegetable production for import substitution. This road will also improve access to the new airport complex from Lelu.

2. Airport Terminal: $250,000: The current OICC T.T.P.I. Capital improvement program does not include any verticle construction. This funding will be used to construct the airport terminal facilities required before the airport can be used. The facilities are required in order to stimulate tourist traffic in Kosrae's infant tourist industry.

3. Airport/Dock Warehouse: $150,000: The Okat transport hub, the new airport and dock facility now being constructed will be a center for export trade. The existing plans do not provide for any facilities on site. The warehouse will be needed to export citrus, marine resource and vegetables produced on Kosrae.

4. Supply Warehouse: $80,000: A supply warehouse is needed for Lelu, the state administrative center. This warehouse will be used for all government supplies including medical supplies, spare parts for office machines and equipment, office and administrative supplies, and utility systems spare parts.

5. Paving-on-Runway (Maintenance Equipment and Training: $1,000,000: The new Kosrae runway now under construction will not be paved. The original plans called for paving of the runway in order to reduce maintenance and operation costs to aircraft, and to encourage international commerce to serve Kosrae. It is important to receive funding for the paving at this time so that construction companies now doing project work on Kosrae can bid on the project without adding additional mobilization costs to the contract. In addition, there is no funding in the current contract for maintenance equipment and training of operation and maintenance personnel for the new airport. (The estimate is not complete pending an A&E study.)

6. High School Gym: $450,000: At present the High School on Kosrae does not have facilities for athletic/recreation acti-

vities. Because of the climate much of the out-door activity normally possible in developing countries is curtailed. This assistance would be used in constructing an all-weather multipurpose facility.

7. Dock Freezer: $50,000: Kosrae is in the process of developing its fishing, citrus and vegetable production for export. In order to export these perishables, a storage area is needed at the new transport hub in Okat. This freezer facility will be placed in the new airport/dock warehouse identified in item 3 above.

8. Circumferential Road: $1,000,000: The current OICC Construction project only paves part of the existing circumferential road. Continued work on paving the remaining sections would benefit all communities by (2) increasing access to centralized medical facilities, (b) begin centralization of villages primary schools, (c) improve access to agricultural areas, and (d) improve access to administrative center in Lelu.

Development Projects:

1. Citrus (Lime-Tangerine) Production for Export: $100,000: One of Kosrae's historical industries is its citrus production. Tangerine and lime trees have been planted in many home sites and production appears substantial enough to permit exporting. At present Kosrae is exporting a small amount of citrus to other states in the FSM. The funding will support: (1) new plantings, (2) training for small producer, (3) setting up selection and processing functions, (4) creating a packaging operation, and (5) establishing a collection storage and transport function.

2. Fisheries Development: $100,000: Kosrae is now in the process of developing its fishing industry on a commercial basis. One of the first steps will be to develop long-line tuna and bill bishing capabilities. At present some of the Japanese fisheries assistance funding is being used for this purpose, but additional funding is necessary. The additional funding will be used to: (1) train fisherman on equipment use, open-sea fisheries fish handling-processing and storage equipment and facility maintenance, (2) construct a larger fisheries facility including an engine and boat repair shop, (3) purchase additional equipment and spare parts, particulary for the purchase of open-ocean vessels and communications equipment, and to begin to develop the markets for fish products on Kosrae and in the Marshalls.

3. Poultry Porduction/Eggs: $50,000: At present Kosrae has no commercial poultry production or does not produce its own eggs. The requested funding will be used to start this import-subsistence industry. Specifically, the funding will be used to (1) hire a project manager for the industry, (2) purchase and set up a central facility for production purposes, (3) import initial stock of chickens and set up continuing supplies of baby chicks and feed, (4) organize marketing system for production, (5) begin to develop meat processing capabilities at a central location, and (6) for training in egg production, broiler production and processing.

FY 1982 Budget Request
State of Kosrae

SUMMARY LISTING

		Amount ($1,000's)
CIP:		
1.	Cross-island Road	$ 120
2.	Airport Terminal	250
3.	Airport/Dock Warehouse	150
4.	Supply Warehouse	80
5.	Paving on Run-way (6000') Maintenance Equipment	1,000
6.	High - School Gym	450
7.	Dock Freezer (60' x 120')	50
8.	Circumferential Road	1,000
	SUB TOTAL	$3,100
DEVELOPMENT:		
1.	Citrus (Lime) Production/Export	$ 100
2.	Fisheries Development	100
3.	Poultry Production/Eggs	50
	SUB TOTAL	$ 250
	TOTAL	$3,350

DETAILED LISTING:

Development Projects:

1. Agriculture Development, Phase I: $250,000: Yap has drafted an agricultural sector five-year plan. Implementation of the plan was begun in January 1981. The plan is divided into three phases. Phase I begins in January 1981 and runs through June 1982. The first phase is divided into three program areas: (a) The Organizational Program: The purpose of this program is to reorganize the Division of Agriculture within the Resources and Development Department, add a function of regional extension services, and upgrade the skills of the field workers. In addition, a revolving loan fund is being established, the purchase of tractors is needed for a village grower tractor service. An outer island agricultural substation is required, and an employee educational leave fund is being established. (b) The Production Program: The purpose of this program is to begin to establish a series of actual productive projects. These include, two integrated farms, citrus groves (planting already started, coconut plantations, a fruit orchard, the beginning of subsistance crop improvement projects, pineapple farms, a pilot reforestation project, a poultry farm, and the start of a rat control project on the outer islands. (c) The Nursery and Research Programs: The purpose of this program is to establish the information necessary for upgrading crop and animal production on Yap. The projects include: local root crop varietal upgrading, betelnut varietal program, vegetable varietal and nursery propagation, coconut seedling and nursery nut storage, guava introductions and yield trials, hog breeding, hog feed trials and poultry production research.

2. Small Industries Development: $1,000,000: The major portion of this funding will be used to establish a fruit processing factory. A U.N. feasibility study of a tropical fruit processing and coconut cream cannery facility was made in Yap in September 1980. The report concluded that the projects are economically feasible. The employment at the plant at full production will be 40 persons. In addition, the project will have a significant effect on the production of fruits (300,000 lbs) and coconuts (550,000 lbs) in Yap with a considerable indirect increase in employment. The initial investments are estimated to be $1,000,000. Yearly sales may be $400,000 of which $220,000 is fruit juice, and $180,000 is coconut cream. Yap State has given this project top priority as the first manufacturing industry in Yap.

The remainder of the small industries development investment will assist in the construction of a warehouse freezing/cooling facility on the new Yap dock. OICC construction of the dock did not include facility construction. As a result, the off-loading of ships is constrained by the need to directly transport commodities, especially perishables, to retailers This process also hinders revenue collection and control for import tax and gross receipts tax.

3. Fisheries Infrastructure: $325,000: The fisheries development is foduced in two geographic areas. First, we need to construct ramps (small marine railways) in three outer island locations, Woleai, Ulithi and Satawal. These ramps will function to bring motor and sailing ships into dry dock for repair, unloading and protection. In addition, this investment will be used to locate refrigeration/freezing units on the three islands identified above. On Yap proper the financing will be used to set up ice-machines, cooling facilities in two villages at the north and south end of the island for fish preservation and storage for community distribution.

Capital Improvement Projects:

4. Southern Yap Water System: $1,164,000: While Yap is a high island, it does not receive the rainfall that Ponape does. To ensure an adequate supply of domestic water, a comprehensive water development program has been initiated. The funds requested will be for the implementation of this program in the southern villages of Yap proper. Specifically, the work to be done is drilling a field of 6-inch wells ($195,000), construct a booster pump station ($80,000), build a 100,000 gallon distribution reservoir ($100,000), construct a distribution system ($238,000). The estimated costs for mobilization and demobilization, A&E, contingency and price increases (inflation adjustment) is $425,000. This system will initially serve 960 people, 19 villages; 1981 conditions.

5. Alternative Energy Development: $357,000: Yap State has started parparing a five-year energy program to increase the self-sufficiency and reduce import for fossil fuels. For FY 1982 Yap State will be ready to implement the following projects: (a) Wind, $250,000: Install 5-40 kilowatt horizontal axis wind generators on Yap Islands Proper. Currently, Yap State is undertaking a Wind Data Collection Program which will help in determining exact site placement of the wind generators. Preliminary data from windy sites indicate that Yap has winds that average 15 knots. Included in this program will be training of Micronesians on installation and maintenance of the wind generators. Cost per wind generator is $50,000 and the average annual electrical output at 12 mpt is 91,000 kilowatt-hours. (b) Solar, $87,000: Install photovoltaic power cells, batteries, two lights and a small refrigerator in dispensaries on the Outer Islands of Yap State. This is a phased five-year program with installation of three systems per year. Cost per system i $5,000. Total cost per year is $15,000. Install solar dryers and ovens in vari-

ous villages in Yap State. Currently, Yap State is experimenting with the applicability of this energy source for drying copra, fish, and local fruits for export and import substitution. Install 24 dryers/ovens per year at a total cost of $12,000 per year. Retrofit twelve government homes with solar hot water systems. This is a five year program to retrofit sixty government-owned homes. Currently electric hot water heaters installed in government housing accounts for approximately five per cent of the total energy usage on Yap Proper. Total cost per system is $5,000. Total cost per year is $60,000. (c) Energy Grants, $20,000: Private sector involvement in alternate energy projects is a must for any energy program to be successful. Therefore, energy retrofit or new construction grants will be made available in Yap State. This grants system will operate similar to the Department of Energy Grants in the United States.

6. Road Construction: $1,000,000: These funds are requested to construct all weather roads on Yap Proper. Specifically, the work will include 7 miles of roads from the New Yap Hospital to Gagil Elementary School, and to construct an all weather road from Colonia Lagoon-Tomil Harbor to Worowo.

Attachment No. 4

COMMUNICATIONS

This paper describes improvements in the local communications network which are urgently needed and can be fully installed in FY 1982. These items are over and above the work now being completed by the Department of Communications of the TTPI. All of the items fall within the rigorously developed forecasts of demand for services.

In addition, because the FSM is developing its own plans and is proceeding at a different pace than the other entities, we request that these funds be appropriated to be directly administered by the FSM (rather than by Trust Territory Headquarters).

Hospital Communications System

The difficulties of medical care are compounded by terrain and lack of communications as well as inadequate transportation facilities. The problems (and concomitant pain and suffering, as well as the collection of reliable epidemiological data) would be greatly alleviated by the construction of a system interconnecting all four hospitals and 103 dispensaries by dedicated high frequency radio. Since CB is also used in the FSM, including in automobiles, this medical system should be further augmented by a double-hop CB repeater station in each state and a CB base station at each hospital with mobile units in the homes and vehicles of key medical personnel. A further major element of such a system would be the installation of slow-scan television at each hospital so that X-ray pictures could be shown from one location to another. (This would serve both training and diagnostic purposes.)

FSM

107 HF radios, solar powered, @$3,000.00	$321,000.00
One CB repeater station per State	40,000.00
40 mobile or home CV units for hospital personnel @$40,00	1,600.00
4 slow-scan TV transmit-receive units, complete with cameras and other ancillary gear	140,000.00
TOTAL	$502,600.00

It should be noted that $300,000 - $400,000 per year is spent on referrals to Letterman Army Medical Center in San Francisco and to hospitals in Hawaii. This money goes for air-fare. FSM physicians estimate half of these could be eliminated if consultants in Hawaii or on the mainland could be reached by telephone augmented by slow-scan television. This kind of consultation service is also essential from hospital to hospital within the FSM.

Power Supplies of Telephone Exchanges

Adequate and reliable power supply is a problem throughout the FSM. None of the telephone exchanges have the needed backup in the event of (frequent/extended) commercial power failures. Needed are:

Ponape	Rectifier/battery supply and standby generator	$ 50,000.00
Yap	Same as above	50,000.00
Truk	Same as above	50,000.00
Kosrae	Same as above	50,000.00
TOTAL		$200,000.00

Telephone Exchange Switching

An immediate expansion of exchange switching capability is required, otherwise the existing exchanges will get overloaded with party lines causing a severe degradation of service. Cost figures are based on expansion costs of $500.00 per line.

Ponape	150 line expansion	$ 75,000.00
Yap	50 line expansion	25,000.00
Truk	80 line expansion	40,000.00
Kosrae	No 1981 requirements	---------
TOTAL		$140,000.00

Telegraphy and Telex

Demand forecasts reveal a need for, and the opportunity to derive significant revenue from, increased and improved telegraphy and the introduction of Telex. It is especially needed between the States and the FSM Capital in Ponape. There is a need for a national-to-international interface and thus it is recommended that modern intelligent electronic teleprinters be purchased. (These machines will include buffer storage, character deletion, start/stop functions and other facilities. Needed in addition is test equipment, tools, paper tape perforators and other associated items.)

FSM

24 teleprinters @$3,000.00	$ 72,000.00
Associated items	10,000.00
Telex printers (10)	30,000.00
Interface for international	135,000.00
Associated items	10,000.00
TOTAL	$247,000.00

Truk Microwave or HF Link

The three main islands of Truk are not linked together in a communications network. For administrative and other purposes there would a great-social utility gain by so doing. It is recommended that a three-island microwave link be established:

$100,000.00

Maritime System

These are island nations. Fishing is becoming an increasingly important revenue-producing activity. Yet, there is no reliable maritime communications system. One is greatly needed.

FSM

4 Maritime Repeater Stations @$25,000.00	$100,000.00

Subscriber Distribution

Additional investments are required for outside plant expansion in order to meet development forecasts. TTPI has appropriated a portion of these expansion costs for Fiscal '81. Additional funds are needed. Budget figures are based on $1,000.00 per subscriber line.

Ponape	Additional 150 lines	$150,000.00
Yap	Additional 50 lines	50,000.00
Truk	Additional 150 lines	150,000.00
Kosrae	Not required	----------
TOTAL		$350,000.00

Radio Broadcasting

Radio can play a significant role in a developing country to help achieve economic and social development goals and in creating national unity. Radio in the FSM now consists of four separate local stations, each State operated, with no linkage between them and no plan to integrate their programs into either the local or the FSM communications system. These stations are old in in extremely poor physical condition. Vital equipment and parts have broken down, thus preventing the production of the kinds of programs that would be of great value to a development effort. There is some question at this moment as to whether they are operating on the proper power level and frequency. They are in sufficiently poor condition that it is doubtful whether repairs can do the job; they need replacement.

Four Radio Stations
(new transmitters, studio and
(remote equipment, parts, tools,
(test equipment)..............................$600,000.00

Buildings

The need for expansion has reached the critical state in Ponape. There will be a need in all four States in terms of the ten year forecasts, but for FY 1982 we recommend only:

Ponape Construct building
with 5,000 line capacity...........$200,000.00

Miscellaneous Items

The FSM;s physical environment is basically a hostile one for vehicles, tools and test equipment. Such items are urgently needed, on either a replacement basis or to accommodate the existing and planned expansion, and include basic repair equipment and parts.

Equipment and parts...........................$160,000.00

Personnel Training

Training is needed for virtually every system and activity now in place and proposed; it is impossible to overstress the need. A telecommunications system such as is being developed and with the recommended necessary expansions needs skilled people at all levels. The system is complex and will be undergoing considerable change in the next few years. The need is not only on the technical level; there is a need for trained management as well.

Also embedded in this recommendation is our view that the system should, as quickly as possible, be managed and maintained by Micronesians. Clearly this is prefereable to importing and housing high-priced expatriates.

The required formal training will have to take place, of necessity, outside the territorial boundaries of the FSM. It should begin immediately, as there exist urgent needs.

Even the system now in place requires additionally trained personnel for both its operation and maintenance. Those individuals currently charged with operating high frequency radios have never formally been taught their proper use and maintenance. The system would profit by both a series of courses and the production of training manuals, translated into the eight languages commonly in use throughout the FSM.

FSM

HF radio manuals, writing, translation, printing	$100,000.00
3 -4 day training course; 50 individuals @$500.00	25,000.00
cost per individual	25,000.00
TOTAL	$125,000.00

TOTAL COMMUNICATIONS REQUEST	$2,724,600.00

Attachment No. 5

FINANCIAL ADMINISTRATION

One of the major priorities of the Federated States of Micronesia in establishing its new government is providing proper financial management and accountability. The National and State governments presently utilize the Financial Management System, a centralized computer based system operated in Saipan by Trust Territory Headquarters that is also shared with the Marshalls and Palau. The FMS has been improved the last several years, but is still unable to close the books at the end of the year, to provide definitive fund balances, or furnish timely and accurate financial information. After extensive discussions with T.T. Headquarters and the Department of the Interior, the Federated States of Micronesia arranged for the Federal Computer Performance Evaluation and Simulation Center (FEDSIM) of the Department of the Air Force to conduct a comprehensive study on the most appropriate means of financial administration for this government.

A preliminary report has been received from FEDSIM which confirms that the Federated States of Micronesia will need to make major improvements in financial administration to properly manage its funds and be accountable to the United States for the funds provided under a Compact of Free Association. Any of the alternatives for improvement will entail added costs and the Federated States is in the process of choosing the least cost alternative that will fulfill its needs. Based on the preliminary results of the FEDSIM study, two of the first types of improvements that will be required by any of the major alternatives involve installing "intelligent terminals" in each of the States to perform initial data processing and edit, and to purchase telecommunications equipment to utilize the satellite communications system for transmitting financial information. The cost of this equipment plus the staff training that would be needed is the following:

Intelligent Terminals	$ 70,000
Telecommunications	$150,000
Staff Training	$ 50,000

A second area of improvement that has been identified by both the FEDSIM study and those conducted by the Department of the Interior is that major changes need to be made in the software of the FMS which may involve upgrading this system or adopting and modifying another system for the FSM's use, such as that operated by the Government of Guam. Estimates made by FEDSIM of such software improvements amount to $180,000.00

In the future, the FSM faces further costs related to financial administration which include paying for computer time and new equipment. If the FSM is required to pay for its use of the computer in Saipan, or if it uses another existing system, such as the Government of Guam, the computer time cost would be $300,000 per year. At some time in the future, the FSM will be prepared to support and effectively use an automated data processing system and this will entail a significant initial outlay cost.

To assure responsible financial administration, the FSM faces both immediate and long-term costs. This represents a significant additional item to be absorbed within an already overburdened operations budget. Because system improvements will require a minimum of two years, it is urgent that sufficient operations funding be provided in FY 1982 for the added costs.

In summary, while the Federated States of Micronesia has not made final decisions on the means of improving financial management systems, we envision a minimum of $750,000 in added costs in the near future.

BUDGET REQUEST

Mr. TAKESY. Mr. Chairman and honorable members, I am Asterio Takesy, Liaison Officer of the Federated States of Micronesia. I am accompanied today by Assistant Liasion Officer Epel Ilon. Mr. Stovall will be with us shortly.

Before I proceed with my testimony, Mr. Chairman, I would like to state for the record that our Vice President, the Hon. Petris Tun was here in Washington in early May, as our principal witness. The postponement of this hearing from May 14 to today precluded his presence before this committee, because of earlier commitments within the FSM. He therefore asked that I convey to you his deep regret for being unable to personally appear before you today.

Senator JOHNSTON. Tell Mr. Tun, we're sorry to miss him, and we understand completely why he can't be here.

Mr. TAKESY. I very much appreciate the opportunity to testify on behalf of the national and State governments and present directly to this committee our views on the fiscal year 1982 budget for the Federated States of Micronesia.

We regard fiscal year 1982 as the time when the Federated States of Micronesia can assume several substantial new responsibilities in preparation for free association. Indeed, if prompt determination is to be expected, we must take on these responsibilities; however, our entry into free association still depends on successfully addressing our enormously inadequate infrastructure and economy. We understand the severe budget constraints in the United States, but it is our duty to report to you on our vital needs, which we see as directly related to the stability of our government as a political unit and to achieving eventual selfsufficiency under the compact.

I would like to report on political and economic progress over the past year and then describe our budget needs. Our major political concern is proceeding with the compact of free association initialed last October. With U.S. Government financial assistance, this document has been translated into our nine Micronesian languages, and we are prepared for a public information program. This awaits negotiation of several subsidiary agreements. Our national government has made major progress in staffing and organization and has achieved many tests of becoming a stable and responsible Pacific government.

This has largely been made possible by additional funds provided by this Congress for fiscal years 1980 and 1981, for which we are very grateful; however, a number of vital functions should be assumed by the FSM Government without further delay, in order to prepare us for free association, to avoid needless future expenditures. These include administrative authority over Federal programs, communications, capital improvements, financial management, and the economic development loan fund. We are hopeful that you will support these efforts.

This committee has long been aware of our serious economic difficulties in the FSM. We are inheriting high unemployment, complete dependence on governmental expenditures, and a deteriorating infrastructure and trade imbalances. Our government is preparing a comprehensive 5-year development plan to be completed by August this year. It will be largely based on the actual productive products to be undertaken in our four States. Energy will be a major focus of the plan to dramatically reduce our dependence on petroleum-based power generation.

We should emphasize that these plans are being developed by our leaders and staff without outside help. Our message to the people is that responsibility for economic development rests with them. They must determine priorities and proceed immediately with action. Our funding needs include four areas of high priority, in addition to the administration budget.

These are: one, the rehabilitation of Truk Hospital. We request an additional $1.4 million to alleviate the conditions which continue to cause needless loss of life and suffering; two, continuation of communication improvements, especially for hospitals and dispensaries, as recommended by an international team of consultants. We seek $2.7 million for this, in order to effectively use our satellite communications when they are installed and to prevent deterioration of our communications infrastructure. Three, economic and infrastructural developments. We wish to reduce our economic dependence as soon as possible, and believe we should begin working with the levels of such assistance again in the compact of free association; four, we seek additional operations funds of $5.7 million, to maintain basic health, education and public works service.

I will be happy to answer questions which you may have, Mr. Chairman. For those I am unable to answer today, I would like to request that I be given the opportunity to submit them in writing. Thank you.

EVALUTION OF CONSTRUCTION PROJECTS

Senator JOHNSTON. You certainly will, Mr. Takesy. Thank you very much.

Recently this committee and the Energy Committee received a report on the construction projects and a report on the maintenance needs. Senator McClure has requested your comments on these reports and your evaluation of the overall quality of the projects. We hope you'll have these comments for us as soon as possible. We know you need some time to prepare those.

Senator JOHNSTON. We want to thank you again very, very much for testifying before us. It's always a pleasure to have you.

Mr. TAKESY. Thank you very much.

MARSHALL ISLANDS

STATEMENT OF HON. ANTON deBRUM, FOREIGN SECRETARY, MARSHALL ISLANDS

ACCOMPANIED BY:

HON. ATJANG PAUL, MINISTER OF FINANCE
HON. HENCHI BALOS, SENATOR
HON. ATAJI BALOS, MINISTER OF INTERNAL SECURITY
PHILLIP MULLER, DEPARTMENT OF FOREIGN AFFAIRS
RICHARD BACON, WASHINGTON COUNSEL
JONATHAN WEISGALL, COUNSEL TO THE PEOPLE OF BIKINI ISLAND

INTRODUCTION OF ASSOCIATES

Senator JOHNSTON. Next we have from the Marshall Islands, Mr. Anton deBrum, who is the Foreign Secretary of the Marshall Islands. We are pleased to have you, Mr. deBrum. Of course your full written statement will be put in the record, and I'd like for you to highlight that if you would.

Mr. DEBRUM. Thank you, Mr. Chairman. If I may be allowed to ask my colleagues to join me.

Senator JOHNSTON. Certainly, please do. You can introduce them to us.

Mr. DEBRUM. I'd like to introduce the Minister of Finance, Atjang Paul, and Senator Henchi Balos; and Minister of Internal Security, Ataji Balos.

Senator JOHNSTON. Senator, would you like to come to the table.

Mr. DEBRUM. Also assisting are staff members from our Department of Foreign Affairs, Mr. Phillip Muller and Washington counsel, Richard Bacon.

HIGHTLIGHTS OF STATEMENT

I thank you for allowing our full statement to become a part of the record, Mr. Chairman. I do wish to highlight it, as you said, by calling special attention of this committee to the fact that like the Micronesian governments, we are also requesting compact-level funding. We elaborate in our full statement as to the reasons for this. Basically it is, at this point in time nothing short of this level would really meet requirements of our government and needs of our people.

Additionally, Mr. Chairman, we wish to call the attention of the committee to our request also to the House Committee and to the Department of the Interior for a clarification on the status of a $12 million relief fund, which we had understood to have been authorized to alleviate difficulties encountered in the flooding of the capital of the Marshalls in 1979.

In connection with this, Mr. Chairman, we ask that the committee favorably consider the exemption of the requirement that the Government of the Marshalls contribute slightly over $600,000 or 25 percent of expenditures of the Federal Emergency Management Administration in connection with the relief effort.

In our statement, Mr. Chairman, we also refer to continuing radiation-related problems in the Marshalls. Senator Balos has asked that he be allowed to speak to that issue briefly during this hearing.

We do recognize, Mr. Chairman, the desires of the Government of the United States to reduce spending to deal with the problems of inflation; however, given the dependence of our islands on Federal funds and given the need for our government to extend rather than restrict services required for our people, we request that the committee consider not reducing the funds being made available to us, but actually examining the real requirements and fund them in accordance with the needs.

The amounts requested by the Department of the Interior this year, as in previous years, is a sum with which we cannot agree. It simply is not sufficient to meet our requirements.

PREPARED STATEMENT

We thank you, Mr. Chairman, for your continued interest in our development, and stand ready to answer any questions you might have.

[The statement follows:]

Statement of Tony A. Debrum

I AM HONORED TO APPEAR TODAY BEFORE YOUR ESTEEMED COMMITTEE TO PRESENT THE BUDGET REQUEST OF THE GOVERNMENT OF THE MARSHALL ISLANDS FOR FISCAL YEAR 1982.

SINCE THE INCEPTION IN 1969 OF FORMAL NEGOTIATIONS WITH THE UNITED STATES TOWARD A DETERMINATION OF THE TRUST TERRITORY'S FUTURE POLITICAL STATUS, 1981 HAS REMAINED AS THE AGREED UPON TARGET DATE FOR AN AMICABLE AND MUTUALLY ACCEPTABLE TERMINATION OF THE U.N. TRUSTEE RELATIONSHIP. WITH THAT DATE IN MIND, WE HAVE WORKED DILIGENTLY TO DETERMINE PRECISELY WHAT THAT NEW STATUS WILL BE, BOTH IN TERMS OF INTERNAL POLITICAL STRUCTURE AND IN TERMS OF OUR RELATIONSHIP WITH THE UNITED STATES. IN ACCORDANCE WITH THE SCHEDULE ESTABLISHED FOR DETERMINATION AND FULL ATTAINMENT OF THAT STATUS IN 1981, THE ENSUING 12 YEARS HAVE BEEN A BUSY AND SOMETIMES BITTER EXPERIENCE FOR THE PEOPLE OF THE MARSHALL ISLANDS:

-- WE ORGANIZED, IN 1973, THE MARSHALL ISLANDS POLITICAL STATUS COMMISSION, RESPONSIBLE FOR CONDUCTING NEGOTIATIONS WITH THE U.S. ON OUR FUTURE POLITICAL STATUS.

-- PURSUANT TO AN ACT OF THE CONGRESS OF MICRONESIA, A CONSTITUTIONAL CONVENTION WAS CALLED TO DRAFT A TERRITORY-WIDE CONSTITUTION IN 1976 AND 1977.

- WHEN THAT CONSTITUTION PROVED UNACCEPTABLE TO THE MARSHALLESE PEOPLE, IN THE JULY 1978 REFERENDUM, OUR LEGISLATURE CONVENED ITS OWN CONSTITUTIONAL CONVENTION TO COOPERATIVELY DEVELOP A GOVERNING CONSTITUTION APPROPRIATE FOR THE MARSHALL ISLANDS. THAT DOCUMENT WAS ADOPTED BY THE CONVENTION IN DECEMBER 1978, PROVIDING FOR A DEMOCRATIC PARLIAMENTARY GOVERNMENT UNIQUELY SUITED TO OUR ISLANDS.

- IN ACCORDANCE WITH THAT CONSTITUTION, NATIONAL ELECTIONS WERE CONDUCTED IN APRIL 1979 AND OUR PARLIAMENTARY LEGISLATURE AND PRESIDENT TOOK OFFICE ON MAY 1, 1979, BECOMING THE FIRST LOCALLY ELECTED GOVERNMENT IN THE HISTORY OF OUR ISLAND NATION.

- FOLLOWING THE ESTABLISHMENT OF THIS GOVERNMENT, AND IN ACCORDANCE WITH U.S. SECRETARIAL ORDER NO. 3039 FROM YOUR DEPARTMENT OF INTERIOR, WE GRADUALLY BEGAN TO ASSUME RESPONSIBILITY FOR AND EXERCISE CONTROL OVER THE MANY FUNCTIONS OF GOVERNMENT THERETOFORE VESTED IN THE U.S.' TERRITORIAL HEADQUARTERS ON SAIPAN. FOR THE MOST PART, THE TRANSFER OF THESE FUNCTIONS HAS BEEN CARRIED OUT IN A SMOOTH AND ORGANIZED MANNER.

- AT THE SAME TIME, OVER 11 YEARS OF POLITICAL STATUS NEGOTIATIONS CULMINATED IN OCTOBER

1980 WITH THE FORMAL INITIALLING BY OFFICIAL REPRESENTATIVES OF BOTH GOVERNMENTS OF A DETAILED AND SPECIFIC COMPACT PROVIDING THE MARSHALL ISLANDS A POLITICAL RELATIONSHIP OF FREE ASSOCIATION WITH THE UNITED STATES. TRANSLATION OF THIS COMPACT INTO THE MARSHALLESE LANGUAGE HAS BEEN COMPLETED AND A PUBLIC EDUCATION PROGRAM LAUNCHED TO THOROUGHLY FAMILIARIZE EVERY MARSHALLESE WITH THE TERMS AND CONTENTS OF THAT COMPACT.

AS I STAND BEFORE YOU TODAY, THE PEOPLE OF THE MARSHALL ISLANDS ARE POISED AND READY TO TAKE THE FINAL STEP NECESSARY FOR SELF-GOVERNMENT BY APPROVING THAT COMPACT. THE POLITICAL AND ECONOMIC PLANNING EFFORTS OF THE PAST 12 YEARS, FOCUSING AS THEY DID ON 1981, WILL BE REWARDED ONLY WHEN THAT COMPACT HAS TAKEN EFFECT AND FULL ATTAINMENT OF OUR NEW POLITICAL RELATIONSHIP RECOGNIZED.

WITH THIS IN MIND, AND WITH GREAT CONCERN THAT THE PROPERLY NEGOTIATED FUTURE RELATIONSHIP BETWEEN THE MARSHALL ISLANDS AND THE UNITED STATES COMMENCE ON SCHEDULE, I PRESENT TO YOU TODAY THE REQUEST OF MY GOVERNMENT FOR FINANCIAL ASSISTANCE FROM THE UNITED STATES, BEGINNING IN FISCAL YEAR 1982, AT LEVELS AGREED UPON IN THE COMPACT OF FREE ASSOCIATION.

IN CONSTRUCTING THE MATERIALS PRESENTED TO YOU IN SUPPORT OF THIS REQUEST, WE HAVE BEEN GUIDED BY A PRE-

MISE ESPOUSED BY VIRGIN ISLANDS PRESIDING JUDGE VERNE A. HODGE: "THERE IS NO COMMUNITY THAT DOESN'T HAVE PROBLEMS, OR HAS THE MONEY TO DO EVERYTHING." THE MARSHALL ISLANDS CONTINUE TO HAVE MORE THAN THEIR SHARE OF PROBLEMS AND QUITE OBVIOUSLY, EVEN WITH COMPACT LEVEL FUNDING, WILL NEVER HAVE THE MONEY TO DO EVERYTHING. WE HAVE, THEREFORE, TARGETED OUR FY 82 PRIORITIES ON TWO MAJOR OVERLAPPING AREAS: CAPITAL IMPROVEMENT PROJECTS AND OUTER ISLAND DEVELOPMENT.

MOST CAPITAL PROJECTS ARE DIRECTLY LINKED TO ECONOMIC DEVELOPMENT, IN TERMS OF PROVIDING BOTH THE BASIC PHYSICAL AND HUMAN INFRASTRUCTURE AND THE ADEQUATE INCENTIVES NECESSARY FOR SUCH DEVELOPMENT TO OCCUR. IN ADDITION TO THE $12 MILLION IN ANTICIPATED DISASTER RELIEF FUNDS FOR CAPITAL REPAIR PROJECTS, SEVERAL VITALLY NEEDED NEW CAPITAL IMPROVEMENTS ARE DETAILED IN OUR REQUEST. MANY OF THESE PROJECTS ARE FOR THE DIRECT BENEFIT OF OUR OUTER ISLANDS WHICH, REGRETABLY, HAVE HAD TO SUFFER SEVERE NEGLECT UNDER THE FUNDING LEVELS PROVIDED TO THE TRUST TERRITORY AND THE MARSHALL ISLANDS TO DATE.

ALTHOUGH OVER 50 PERCENT OF THE MARSHALLESE PEOPLE CONTINUE TO RESIDE IN THE OUTER ISLANDS, IT IS THE DREAM OF MANY THERE TO SEE THEIR CHILDREN GET A JOB IN MAJURO OR KWAJALEIN. THIS WILL NOT CHANGE UNTIL A GOOD LIVING CAN BE MADE IN THE OUTER ISLANDS. SYSTEMS AND TECHNOLOGIES EXIST TODAY FOR VARIED OUTER ISLAND FOOD PRODUCTION AT LEVELS WHICH WOULD PROVIDE SUCH A LIVING;

ONLY THE LACK OF CAPITAL PREVENTS IMPLEMENTATION FROM BEGINNING.

CONTINUATION AND EXPANSION OF OTHER OUTER ISLAND DEVELOPMENT PROJECTS, IN ADDITION TO FOOD PRODUCTION, ARE ALSO NECESSARY. IN THE ONE YEAR THAT IT HAS BEEN OPERATING, THE AIRLINE OF THE MARSHALL ISLANDS HAS BEEN ABLE TO OFFSET ALL OF ITS OPERATION AND MAINTENANCE EXPENSES FROM PASSENGER AND FREIGHT REVENUES. AT PRESENT, HOWEVER, LESS THAN HALF OF THE OUTER ATOLL MUNICIPALITIES HAVE AIRPORTS. REFORESTATION OF MANY ISLANDS IS NEEDED TO PROVIDE FOR IMPROVED COPRA YIELD (BY FAR THE MAJOR SOURCE OF CASH INCOME FOR OUTER ISLANDERS) IN ORDER TO TAKE FULL ADVANTAGE OF THE PROCESSING PLANT IN MAJURO THAT CONVERTS THE COPRA INTO OIL AND SEVERAL USEFUL BY-PRODUCTS. IT IS WORTH NOTING THAT BOTH OF THESE MAJOR DEVELOPMENT PROJECTS, THE AIRLINE AND THE COPRA PROCESSING PLANT, HAVE BEEN ESTABLISHED AND OPERATED WITHOUT U.S. FEDERAL ASSISTANCE. INFRASTRUCTURE AND FACILITIES DEVELOPMENT, INITIAL MANUFACTURE OF FOREST RELATED PRODUCTS, AND IMPROVED FIELD TRIP SERVICE CAPABILITY ARE OTHER NECESSARY ACTIVITIES WHICH WILL BENEFIT THE OUTER ISLANDS.

IN ADDITION, MANY ISLANDS IN THE MARSHALLS, SUCH AS MILI, JALUIT, MALOELAP, AND WOTJE STILL REQUIRE EXTENSIVE REHABILITATION AND REPLANTING. INCLUDED IN THIS WORK IS THE DANGEROUS AND TIME CONSUMING DELICATE REMOVAL OF LIVE AMMUNITION AND UNEXPLODED BOMBS.

TOTAL U.S. ASSISTANCE CONTAINED IN THIS REQUEST AMOUNTS TO $28.15 MILLION, INCLUDING $2 MILLION FOR POST-SECONDARY EDUCATION FACILITIES UNDER PL 94-255.

IN ADDITION TO THE $28.15 MILLION, WE ARE ALSO ANTICIPATING $12 MILLION IN SPECIAL DISASTER RELIEF FUNDS. THIS AMOUNT WAS AUTHORIZED BY THE HOUSE FOR CAPITAL REPAIR AND IMPROVEMENT PROJECTS NECESSITATED BY THE SEVERE WAVE DAMAGE SUFFERED IN MAJURO IN NOVEMBER AND DECEMBER 1979. THE NEED FOR THESE PROJECTS REMAINS CRITICAL AND I WOULD LIKE TO FORMALLY INQUIRE AS TO THE STATUS OF THESE FUNDS.

WE ALSO EXPECT TO CONTINUE TO RECEIVE FUNDING AND ASSISTANCE UNDER THE NUMEROUS FEDERAL (CFDA) PROGRAMS IN WHICH WE NOW PARTICIPATE OR ARE ELIGIBLE TO PARTICIPATE. AS AGREED TO IN THE COMPACT, SUCH FUNDING AND ASSISTANCE ARE TO BE PROVIDED IN ADDITION TO THE BASIC COMPACT-LEVEL FUNDING.

AT THIS POINT, MR. CHAIRMAN, I WOULD BE SERIOUSLY REMISS IN DISCHARGING MY RESPONSIBILITIES IF I DID NOT FORMALLY REGISTER WITH THIS COMMITTEE THE ONGOING ANXIETY OF THE PEOPLE OF THE MARSHALL ISLANDS CONCERNING THE PROGRESS OF THE VARIOUS ADDITIONAL PROGRAMS ESTABLISHED FOR THOSE AREAS AND INDIVIDUALS EXPOSED TO RADIOACTIVE FALLOUT AS A RESULT OF THE ATOMIC AND NUCLEAR WEAPONS TESTING PROGRAM CONDUCTED BY YOUR GOVERNMENT.

THE NOMADIC AND UNCERTAIN EXISTENCE LED BY THE PEOPLE OF BIKINI AND ENEWETAK OVER THE PAST 35 YEARS IS COMPLETELY ANTITHETIC TO THE TRADITIONAL MARSHALLESE WAY OF LIFE AND IS MOST DESERVING OF OUR SYMPATHY, CONCERN, AND ASSISTANCE.

AT THE SAME TIME, APPREHENSION AND CONFUSION CONTINUE TO DOMINATE OUR THOUGHTS WITH REGARD TO THE OTHER ISLANDS AND ATOLLS OF THE MARSHALL ISLANDS WHICH WERE ALSO SUBJECTED TO RADIOACTIVE FALLOUT CONTAMINATION AS A DIRECT RESULT OF THE TESTING PROGRAM. BASED ON PRELIMINARY RESULTS OF THE "NORTHERN MARSHALLS RADIOLOGICAL SURVEY," CONDUCTED IN 1978 BY THE U.S. DEPARTMENT OF ENERGY, A COMPREHENSIVE PROGRAM OF EDUCATION AND HEALTH CARE FOR THE PEOPLE OF THOSE ISLANDS WAS MANDATED BY PUBLIC LAW 96-205. FOR THE RECORD, I WOULD LIKE TO INQUIRE AS TO THE PRESENT STATUS OF THAT PROGRAM AND OF THE FINAL ANALYSES AND REPORTS OF THE 1978 SURVEY.

FINALLY, I MUST NOTE THAT IN REQUESTING COMPACT-LEVEL FUNDING, MY GOVERNMENT ACKNOWLEDGES YOUR CONCERN FOR REDUCING U.S. FEDERAL SPENDING AND SHARES YOUR DISTRESS AT THE PRESENT ECONOMIC CONDITIONS IN THE UNITED STATES. WE ARE ALSO AWARE OF THE NEED FOR TIME FOR YOUR NEW ADMINISTRATION TO REVIEW THE COMPACT AND ITS TERMS. WE ARE GRAVELY CONCERNED, HOWEVER, THAT THE BUDGET REQUEST SUBMITTED TO YOU BY THE DEPARTMENT OF INTERIOR IS CONTINGENT ON THE COMPACT NOT BEING APPROVED AND ADOPTED FOR AT LEAST 15 MORE MONTHS, AN

APPARENT INDICATION THAT SUCH REVIEW HAS ALREADY BEEN COMPLETED WITH NEGATIVE RESULTS. WE STRONGLY FEEL THAT THE TERMS OF THE COMPACT WERE PAINSTAKINGLY NEGOTIATED, IN GOOD FAITH, OVER A SIGNIFICANT PERIOD OF TIME AND THAT THOSE TERMS SHOULD BE ADHERED TO EQUALLY BY BOTH GOVERNMENTS. FOR OUR PART, WE ARE REQUESTING NO MORE ASSISTANCE THAN THAT AGREED TO IN THE COMPACT, DESPITE THE TEMPTATION TO EMPLOY SITUATIONAL ETHICS THAT WOULD ALLOW US TO REQUEST MORE. FOR YOUR PART, DESPITE YOUR PUBLIC COMMITMENT TO REDUCED OVERALL SPENDING, WE EXPECT NO LESS ASSISTANCE THAN THAT AGREED TO IN THE COMPACT.

WHILE THE SUMS REQUESTED BY THE DEPARTMENT OF INTERIOR WILL JUST BARELY PROVIDE FOR THE MOST STRINGENT OPERATION OF OUR BASIC GOVERNMENT SERVICES, THOSE AMOUNTS WILL DO NOTHING TO PUT US BACK ON OUR FEET AGAIN. THE DEPARTMENT OF INTERIOR FIGURES, IN EFFECT, SPELL FOR US ANOTHER YEAR OF MERE HAND-TO-MOUTH EXISTENCE, WITH NO REAL CONTRIBUTION TO OUR SELF-SUFFICIENCY. WE ARE SADLY BEING ASKED TO EXTEND FOR AT LEAST ONE MORE YEAR, OUR TOTAL AND SOMETIMES HUMILIATING DEPENDENCE ON THE UNITED STATES DOLE. IT MERELY PROLONGS OUR HAVING TO ARTIFICIALLY KEEP ALIVE A STAGNANT, NON-PRODUCTIVE ECONOMY WHICH BOASTS 90 PERCENT IMPORTED FOOD, 100 PERCENT IMPORTED ENERGY, UP TO 40 PERCENT UNEMPLOYMENT, INADEQUATE HEALTH AND EDUCATION FACILITIES, SUBSTANDARD HOUSING, LACK OF WATER, POWER, AND EVEN THE MOST RUDIMENTARY FORMS OF SANITARY FACILITIES.

MR. CHAIRMAN, WE TRULY APPRECIATE THIS OPPORTUNITY TO ADDRESS YOUR COMMITTEE AND WE SHALL ENDEAVOR TO ANSWER ANY QUESTIONS YOU OR THE COMMITTEE MEMBERS MAY WISH TO ASK. THANK YOU ONCE AGAIN FOR YOUR CONTINUED INTEREST AND CONCERN FOR OUR PROGRESS.

RADIATION

Senator JOHNSTON. Thank you, Mr. deBrum. We have a number of questions, which I think probably would be better answered in writing. Some of them are technical in nature, which we would submit to you. I might say—off the record.

[Discussion off the record.]

Senator JOHNSTON. Senator, you wanted to speak briefly on the question of radiation.

Mr. BALOS. Yes, Mr. Chairman. First, I'd like to thank you for allowing me to join the Marshallese delegation. I appreciate this opportunity to appear before your committee.

Mr. Chairman, as you know, the people of Bikini have their own legal counsel, and if you would allow him to come and join me, we would make our requests to your committee.

Senator JOHNSTON. That would be fine.

Mr. BALOS. Mr. Chairman, thank you. I've asked Mr. Weisgall to present our request to this committee, if he would.

Senator JOHNSTON. If you could be rather brief, because we're on a short timespan. We welcome, of course, further supplementary remarks in writing, which we will very happily consider.

Mr. WEISGALL. Thank you, Mr. Chairman.

BIKINI ISLAND

Quite briefly, in 1978, when the people of Bikini were moved off Bikini following a determination by the Department of the Interior that Bikini would have to stay off limits for a period of anywhere from 20 to perhaps 60 or more years, a fund was established, the Bikini rehabilitation fund. I believe approximately $3 million went into that fund. Most of that money was used to construct temporary facilities on Kili Island, where the Bikinians were moved back to and on Ejit Island in Majuro Atoll.

Recently, the High Commissioner ordered a contract for the construction of an airstrip on Kili Island, which, of course, is most welcomed by the people. The problem is the Bikini rehabilitation fund is now virtually exhausted. There's very little money left in that fund, and there are very important ongoing needs of the Bikinian people. One example is the need for an independent assessment of the Department of Energy's findings on the radiological safety of Bikini.

ASSESSMENT OF DOE CONCLUSIONS

The Bikinians have arranged with a very respected team of scientists from Harvard University to do a very bare-bones assessment of DOE's work to validate the conclusions reached by DOE. There appear to be some serious questions raised within the U.S. Government about applicable radiation standards that should apply to Bikini, and the people feel, based on the very sad past history that has existed, first with the Atomic Energy Commission and with ERDA and DOE, that some independent assessment is needed. This is one example of the ongoing funding requests that the Bikinians have.

. There is nothing in the Department of the Interior's fiscal year 1982 request for replenishment of the Bikini rehabilitation fund. I think the main reason for that——

Senator JOHNSTON. The report they would do would cost how much?

Mr. WEISGALL. The proposed budget for the report, part to be funded by DOE—there is a budget of, I believe, $96,000. A second phase would involve preparation of the report in English and in Marshallese for the Bikinians, and a trip down to Kili to answer the Bikinians' questions about the safety of Bikini, looks about in that same neighborhood.

Senator JOHNSTON. Is the report to reexamine the questions of what the radiation levels are or rather to report on what the standards should be with respect to Bikinians who go there, how much radiation they can take. Which of the two is it?

Mr. WEISGALL. It's really both—an assessment, evaluation and review of DOE's work. I think it can be divided into three parts. No. 1, what diet assumptions did DOE make in its projections for a return to Bikini? Those numbers had to be studied. No. 2, once you put together your diet assumptions, what are the actual measurements of the radioactivity in each main component of the diet? No. 3, once you have measured the radioactivity in the different food samples that constitute the diet, what are the health risks presented by the total diet?

Those are the three main aspects of the study. Really, all three would have to be done. We envision a technical scientific paper to be prepared by the Harvard team, led by a professor at Harvard Medical School. The second phase is the preparation of a law report for the Bikinians and a discussion with them of the risks, the questions of returning to Bikini.

So that once and for all, the Bikinians, hopefully, can put behind them the question of a return to Bikini and perhaps look at Kili as a more permanent home. On the other hand, the assessment might differ with what the U.S. Government has found. We just don't know how that will come out.

Senator JOHNSTON. We're familiar with that problem on Bikini. I personally would be very sympathetic to an additional study. "60 Minutes" did, I think, a good job on reporting on that difficulty, as well. If you will report that to us more fully in a written report, we would be very pleased to receive that.

Mr. WEISGALL. I will. Thank you, Mr. Chairman.

Senator JOHNSTON. And we will have a number of written questions for you as well.

Did you have something to add?

Mr. BALOS. If I may, Mr. Chairman, I would like for the record to thank the Marshalls delegation headed by Mr. Tony deBrum for having me join this delegation here. Thank you, Mr. Chairman.

Senator JOHNSTON. We're very pleased to have you, Senator. You and your counsel contributed to this very much.

Do you have something additional?

Mr. DEBRUM. Yes, Mr. Chairman. I know we're pressed for time.

This morning we listened to some of the questioning that was done by the committee to the Department of the Interior. We realize that there are still other questions that you will be presenting to the Department in writing. We also are aware that some questions will be directed to us in writing as well. We would, however, ask that we be allowed to comment also on some of the questions put to the Department of Interior, not necessarily because we totally disagree, but we would like perhaps to complement some of the responses.

Senator JOHNSTON. Yes, of course. We welcome any supplement to your statement that you wish to add. The questions will be essentially the same as we put to the Department of the Interior, but anything else you would like to add, we'd very much like to receive.

Mr. DEBRUM. Thank you very much.

Senator JOHNSTON. Thank you very much, gentlemen.

PALAU DELEGATION

STATEMENT OF VICTORIO UHERBELAU, SPECIAL ASSISTANT TO THE PRESIDENT, REPUBLIC OF PALAU

ACCOMPANIED BY LYNN SUTCLIFFE, WASHINGTON COUNSEL

INTRODUCTION OF ASSOCIATES

Senator JOHNSTON. Finally, we have the Republic of Palau with Mr. Uherbelau. I'll let Mr. Uherbelau tell us the correct way to pronounce that. We're very happy to have you, and you're accompanied by our friend and your counsel, Lynn Sutcliffe. Did I pronounce that correctly?

Mr. UHERBELAU. It's pronounced Uherbelau, Mr. Chairman.

Mr. Chairman, for the record, my name is Victorio Uherbelau. I'm special presidential representative to the Micronesian Status Negotiations. I'm here today to present on behalf of Vice President Oiterong, the testimony of the Republic of Palau. Accompanying me to these hearings is Mr. Lynn Sutcliffe of the law offices of Van Ness, Feldman, Sutcliffe, Curtis and Levinberg, our Washington counsel.

I am honored to appear before this committee to explain to you the minimum financial requirements of the newly created Republic of Palau. This is, indeed, a special day for us. This is the first time that the people of Palau have been represented by their own constitutional government in testimony before the U.S. Senate.

BUDGET REQUEST

The budget before you of $9,043,000 was prepared while Palau was still a district of the trust territory. Many of the changes in that budget we will recommend today, are a result of our change in status from a district to a republic. As we testify here today, we are not unmindful of the overall budgetary situation in the United States. We realize it is a time of sacrifice for many U.S. citizens and for us as well.

Therefore, we have prioritized our own needs. We appear before you today to ask you to fund at least those items which are necessary to satisfy our basic needs, those items which are lifesaving or life-maintaining for us. The items include, one, the need for running water to meet minimum levels of sanitation and minimum requirements of living. Two, improvement in health care through renovation of our dilapidated hospital. Funding of patients until our hospital is renovated and moneys to provide basic medical supplies. Three, enough funds to purchase oil to operate our antiquated diesel-fired generators to meet our minimum electrical requirements. And four——

Senator JOHNSTON. May I interrupt you at this point, Mr. Uherbelau to tell you that I have read your statement completely, and it is a very persuasive statement. I understand you have a presentation to make which we're most anxious to see. I don't want to cut you off, but we have read your statement completely.

Mr. UHERBELAU. You interrupted very timely, Mr. Chairman, I was just about to ask that the tape be shown.

Mr. SUTCLIFFE. Mr. Chairman, this is just a portion of a film which goes extensively into the needs, but it focuses on three of the main items that can be shown very visually. One, the water. Two, the hospital problem. Three, some of the road problems that presently exist. It's about an 8-minute segment.

Senator JOHNSTON. I might add, I've been to Palau, and I'm familiar with your problems, along with the great beauty of your islands, I must say.

[Film shown.]

Senator JOHNSTON. I want to congratulate you on putting together this very excellent videotape for us. That says very graphically what your needs are. I might say that committee staff as well as my personal staff was there in Palau earlier, the later part of this last year, and is well aware personally of these problems, particularly with your hospital, along with your road situation. I know you've also got serious drainage problems on your roads. I think the Navy just did a very bad job, frankly. I don't know why they did such a bad job, but they have.

PREPARED STATEMENT

We want to thank you for this presentation. Of course, the full written statement will be in the record.

[The statement follows:]

STATEMENT OF ALFONSO R. OITERONG, VICE PRESIDENT, REPUBLIC OF PALAU

I am honored to appear before this Committee to explain to you the minimum financial requirements of the newly created Republic of Palau. I am accompanied today by the Honorable Carlos Salii, Speaker of the House of Delegates and Mr. Jonathan Maui, Budget Director for the Republic of Palau.

This is a special day for us. This is the first time that the people of Palau have been represented by their own constitutional government in testimony before the United States Senate. The budget before you was prepared while Palau was still a District of the Trust Territory. Many of the changes in that budget we will recommend today are a result of our change in status from a District to a Republic.

As we testify here today we are not unmindful of the overall budgetary situation in the United States. We realize that it is a time of sacrifice for many United States citizens and for us.

Therefore, we have prioritized our own needs. We appear before you today to ask you to fund at least those items which are necessary to satisfy our basic needs -- those items which are life saving or life maintaining for us. The items include: (1) the need for running water to meet minimum levels of sanitation and minimum requirements of living; (2) improvement in health care through renovation of our dilapidated hospital, funding of patient referral until our hospital is renovated, and monies to provide basic medical supplies; (3) enough funds to purchase oil to operate our antiquated diesel-fired generators to meet our minimum electrical requirements; and (4) enough money to provide for the operation and maintenance of our existing infrastructure (as inadequate as that is) so that the capital improvements that have been provided by the United States do not fall into disrepair. These items are discussed in brief below.

1. Water System Repair

The government of the United States has invested $7.251 million to provide a water system for Koror, Palau's principal population center. The people of Palau are not as appreciative of this substantial investment as they might be. There is a simple reason for this: the water system does not work.

There are two reasons why it does not work: (1) the system leaks, preventing its use for more than 4 hours each day; and 2) people put strains on the system during the period in which water is available. For example, they leave the taps open and a bucket underneath to capture water during the time that the system functions so that they can try to use toilets and other facilities when the water is not flowing. Finding and repairing the leaks will solve both problems.

$500,000 is needed to locate and repair the leaks in the water system so that the capital city of Koror can provide minimal sanitation and living conditions for its people. Our own legislature recently raised and appropriated $64,000 to prevent the entire water system from failing. (The water system is discussed in detail at pp. 3-4 of the Appendix to this statement.)

2. Health Care Needs

Palau's only existing major medical facility, McDonald Memorial Hospital, can only be described as grossly substandard. The Republic of Palau has prepared a videotape which illustrates the inadequacies much better than any written words can; and we would like to present a brief portion of that videotape.

The lack of any proper hospital facilities requires the Republic of Palau to refer people to other facilities. These people do not have the economic resources to pay for these referrals and the costs, therefore, for the most part fall upon the government of the Republic of Palau. Until we can obtain adequate hospital facilities in Palau, it will be necessary to have additional monies to support medical referral.

We also need funds to purchase needed medical supplies. Medical supplies used to be purchased centrally by the Trust Territory. Now they will have to be purchased at lower volume and higher costs. Our present hospital supplies are woefully inadequate.

The government of Palau needs a minimum $176,000 of increased support for medical referral and at least $100,000 of increased support for medical supply purchases. Preliminary estimates for renovation and upgrading of the McDonald Memorial Hospital are in the range of $3 million. Outlays for FY 1982 for design development and emergency upgrading of facilities would require $1 million. (See detailed discussion of medical services and hospital renovation needs at pp. 5-8 of the Appendix.)

3. Power Supply

This Committee is no doubt familiar with Micronesia's problems caused by escalating fuel costs. The Micronesian entities are dependent upon diesel-fired generators to supply their basic electrical needs. Because of actions by OPEC, the price of diesel fuel has escalated to the point where one-quarter of the entire budget of the Republic of Palau is expended for diesel fuel.

The Republic of Palau hopes to correct this situation in the mid-to-long term by obtaining an energy system based upon renewable resources. In the meantime, Palau must operate with its diesel-fired generators as efficiently as it can.

Palau has taken all measures within its power in recent years to meet its rising fuel costs using the scarce amounts budgeted. Through a concerted effort in increased maintenance and conservation in 1981, Palau reduced fuel consumption by twenty-two percent (22%) while simultaneously increasing power production by eight percent (8%). Moreover, Palau doubled its billing rates to customers for electricity in FY 1981 and will increase user charges by about another fifty percent (50%) in FY 1982, despite the fact that the rate being charged in FY 1981 is already twice as high as the amount charged by other Micronesian entities. The $2.5 million special fuel reserve fund requested by Interior for FY 1982 for the entire TTPI is not sufficient to cover the anticipated fuel cost increases for the Micronesian entities. Palau's own estimated deficit for fuel costs would alone exhaust the reserve fund.

We respectfully request this Committee to provide the funds necessary ($2.5 million) to ensure the availability of fuel to provide the basic power needs for the citizens of the Republic of Palau. (See detailed discussion at pp. 9-10 of the Appendix.)

4. Operations and Maintenance

As one commentator has said, it is "penny-wise and pound-foolish" for the government of the United States to undertake a five-year CIP program ($45.618 million) to provide basic infrastructure for Palau and not provide adequate operations and maintenance funds to support those capital improvement projects. Based upon formulas developed by the government of the United States, the Republic of Palau would require $2 million annually to maintain properly the capital infrastructure (valued at $23,980,000) which OICC has completed to date. To maintain its capital equipment (presently valued at $10 million dollars) a sum of $900,000 would be required.

In these austere times the Republic of Palau is not asking for the amount suggested by the government formula. We have carefully reviewed our barest needs and request the following:

1.	Water System/Sewer System:	$1,000,000
2.	Road System:	750,000
3.	Power Generators:	250,000
	TOTAL	$2,000,000

(*See* detailed discussion at pp. 11-12 of the Appendix.)

5. *Additional Needs*

In addition to the life saving and life maintaining needs that the Republic of Palau respectfully requests this Committee to meet through additional appropriations, the Republic of Palau has other needs related to economic and social development that would lessen Palau's economic dependence upon the United States. We would hope that the Committee will carefully consider these needs and see if some or all of them could be funded during this time of fiscal restraint. It is our belief that the funding of these programs at this time would enable the Republic of Palau to begin assuming a larger burden of financing its government operations and basic development needs, lessening the cost to the United States. (*See* detailed discussion at pp. 14-20 of the Appendix.)

In closing, we wish to thank this Committee for the opportunity to appear and share with you our views of what the Republic of Palau's needs are. Even though we are a new Republic born just a few months ago, we do not come before you merely as supplicants. We believe that the Republic of Palau is of strategic importance to the United States and we have been negotiating with your government to satisfy your military land use and operating needs. In November of last year we initialled a Compact of Free Association and a Military Land Use and Operating Rights Agreement. Before the Compact or subsidiary agreements can become effective they must be signed by the Presidents of both countries, approved by the Legislatures of both countries and accepted in a plebiscite by the people of the Republic of Palau.

Political reality in Palau is such that it will be much easier for our government to sign and obtain the necessary public approval of an agreement which accommodates your strategic interests _if_ our water system is working, _if_ our power plant is generating electricity, _if_ our roads, sewers, and facilities are being maintained and _if_ the basic health care needs of our people are being met in our own renovated hospital as a result of U.S. assistance. These are the existing political facts I am sure the members of this Committee can fully appreciate.

The Republic of Palau wants to become freely associated with the United States and wants to serve a constructive role in meeting the security needs of the United States and those of the world at large. We ask you to give us the necessary tools to gain full and complete support of our people in working with the United States on these important security matters.

Thank you.

APPENDIX

PRIORITY I
REPUBLIC OF PALAU
FISCAL YEAR 1982 "ESSENTIAL" BUDGET ADDITIONS
($000's)

ACTIVITY:	REAGAN'S FY 1982 BUDGET REQUEST	REPUBLIC OF PALAU'S PROPOSED BUDGET ADDITIONS		FY 1982 REVISED BUDGET REQUEST OF PALAU
I. OPERATIONS				
A. Judiciary	80.0	-0-		80.0
B. Health Services	1,300.0	276.0		1,576.0
1. Medical Referrals			176.0	
2. Medical Supplies & Equipment			100.0	
C. Education	1,527.0	-0-		1,527.0
D. Public Affairs	493.0	-0-		493.0
E. Resources & Development	1,155.0	120.0		1,275.0
F. Protection to Pers. & Prop.	530.0	-0-		530.0
G. Administration	522.0	250.0		772.0
H. Transportation and Communications	136.0	-0-		136.0
I. Public Works	3,100.0	4,500.0		7,600.0
1. Fuel Costs			2,500.0	
2. Water & Sewer System			1,000.0	
3. Road Systesm			750.0	
4. Power Generators			250.0	
J. College of Micronesia	200.0	-0-		200.0
Total-Operations	$9,043.0	$5,146.0		$14,189.0
II. CONSTRUCTION				
A. Hospital Renovation	-0-	1,000.0		1,000.0
B. Water System Repair	-0-	500.0		500.0
C. Road Safety System	-0-	100.0		100.0
Total-Construction	-0-	$1,600.0		$1,600.0
GRAND TOTAL REQUEST	$9,043.0	$6,746.0		$15,789.0

PRIORITY II
REPUBLIC OF PALAU
FISCAL YEAR 1982 "ESSENTIAL" and "NECESSARY" BUDGET ADDITIONS
($000's)

	ACTIVITY:	REAGAN'S FY 1982 BUDGET REQUEST	REPUBLIC OF PALAU'S PROPOSED BUDGET ADDITIONS		FY 1982 REVISED BUDGET REQUEST OF PALAU
I.	OPERATIONS				
A.	Judiciary	$ 80.0	$ -0-		$ 80.0
B.	Health Services	1,300.0	276.0		1,576.0
	1. Medical Referrals			176.0	
	2. Medical Supplies & Equipment			100.0	
C.	Education	1,527.0	100.0		1,627.0
D.	Public Affairs	493.0	-0-		493.0
E.	Resources & Development	1,155.0	120.0		1,275.0
F.	Protection to Pers. & Prop.	530.0	-0-		530.0
G.	Administration	522.0	250.0		772.0
H.	Transportation and Communications	136.0	920.0		1,056.0
I.	Public Works	3,100.0	6,000.0		9,100.0
	1. Fuel Cost			2,500.0	
	2. O&M			3,500.0	
J.	College of Micronesia	200.0	-0-		200.0
	Total-Operations	$9,043.0	$ 7,666.0		$16,709.0
II.	CONSTRUCTION				
A.	Hospital Renovation	-0-	3,000.0		3,000.0
B.	Water System Repair	-0-	500.0		500.0
C.	Transportation and Communications	-0-	3,150.0		3,150.0
	1. Dock Repair			50.0	
	2. Road Safety System			100.0	
	3. Airport Improvements				
	a. Terminal			2,000.0	
	b. Runway			1,000.0	
	Total-Construction	-0-	6,650.0		6,650.0
	GRAND TOTAL REQUEST	$9,043.0	$14,316.0		$23,359.0

I. HEALTH/SAFETY ACTIVITIES

A. WATER SYSTEM REPAIR: Essential Budget Addition: $500,000

Palau needs these additional funds on an emergency basis in order to locate and repair leaks in the water system of its capital city, Koror. As a result of these leaks, major portions of Koror currently have only 4 hours of running water per day (2 hours in both the morning and evening), an unsanitary and dangerous condition which must be remedied.

Through its 5-year C.I.P Plan for Basic Infrastructure Needs Palau did receive some funds for water system improvements and new water lines operating on a 24-hour basis have been installed in certain areas. However, much of Koror is dependent upon an old, secondary water system built by the Japanese that is suffering from massive leakage. It has been estimated that approximately 50% of the water flowing through the old system is simply lost due to leakage. Operation of this old system on a 24-hour basis would result in a water consumption rate of 151 gallons per person per day; the corresponding figure for the newly-installed system is 88 gallons per person per day.1/ Because of this substantial level of leakage, Palau can make water available through the old system for only 4 hours per day.

The unsanitary conditions caused by the intermittent availability of water for sanitation and other purposes endanger the health and safety of Palau's citizens on a daily basis. Aside from the obvious effects on individual households, hospital patients in Palau must often do without water and there is potential for a catastrophic fire. The importance of repair of the water system to Palau is demonstrated by the fact that it appropriated $64,000 of its own tax revenues for FY 1982 for this purpose. Palau urgently needs this additional $500,000 to restore all of Koror to 24-hour water availability.

1/ The United States standard rate is approximately 60 gallons per person per day. Palau's new water system has a higher rate primarily because many people without 24 hours of water travel to houses of relatives or friends to make use of their water facilities.

B. MEDICAL SERVICES: Essential Budget Addition: $276,000

These additional funds are urgently needed in FY 1982 to cover (1) the increased expenses of referring patients to hospitals outside of Palau, and (2) rising costs of medicine and other medical supplies.

1. Medical Referrals: $176,000

Because of the dilapidated and substandard condition of Palau's only hospital (described elsewhere in this Appendix), it is often necessary to refer patients with serious illnesses to other medical facilities in Guam or Hawaii. Palau's hospital has a highly trained professional staff, yet the decrepit nature of its facilities requires the referral of cases needing more than ordinary treatment to other facilities. The high cost of medical care outside Palau and the almost subsistence nature of the Palauan economy mean that referred patients normally cannot afford this treatment, and the cost therefore falls upon the Republic of Palau.

Although Interior has requested $100,000 for FY 1982 to cover patient referrals from Palau, an additional $176,000 is needed to cover anticipated referral expenses for this period. The volume and cost of patient referral has increased substantially in the last several years. In FY 1980, the actual cost of medical referrals to Palau was over $200,000 for 38 patients. Incomplete figures for FY 1981 show an increase in the number and cost of patient referrals over those levels,[2/] and Palau estimates that 52 patients will require referral in FY 1982 at a total cost of $275,500.

The additional $176,000 is necessary to ensure that the citizens of Palau receive proper medical care. Palau is attempting to keep its referral costs to a minimum by using its own facilities to the maximum extent possible and by requiring the patients themselves to bear the cost of travel to the other medical facilities, a practice unique to Palau. Despite these measures, it is inconceivable that Palau's referral expenses will come within the amount requested by Interior for FY 1982.

[2/] As of April 17, 1981, 24 patients were referred for a cost of $110,293.

2. Medical Supplies & Equipment: $100,000

Palau needs an additional $100,000 above Interior's request for FY 1982 ($258,000) to cover the rising costs of, and its increased need for medicine and other medical supplies. In FY 1981 medical supplies and equipment were purchased centrally by the Trust Territory government for all entities in the TTPI. Palau will have to purchase these goods independently in FY 1982, and the lower volume of purchases will result in increased costs. Moreover, Palau must purchase medicine and supplies from Guam, Hawaii or the mainland, adding steep transportation costs to the already rising prices of those materials. The transportation time occasioned by Palau's geographic isolation also means that larger inventories of medical goods must be maintained to ensure adequate supply. All of these factors mandate an increased level of funding for medical supplies for Palau in FY 1982.

C. HOSPITAL RENOVATION: Essential Budget Addition: $1,000,000
Necessary Budget Addition: $3,000,000

Palau's only existing major medical facility, McDonald Memorial Hospital, can only be described as grossly substandard. The hospital, built in 1959, consists primarily of concrete block and wood frame buildings with galvanized tin roofing. (There is a concrete block portion completed in 1977 which houses the doctors and the outpatient facilities and serves as the administration center.) Structural deficiencies abound in all parts of the main facility -- a complete electrical rewiring is necessary; the air conditioning system is nonfunctional; and the roof is rusted and leaks, leading to internal water damage. The emergency room is equipped to handle only a single patient at a time, and much of the equipment therein does not function properly. The hospital's emergency power generator has no automatic trip switch, and power outages of up to one-half hour result. The hospital's mental illness ward consists of barred "cells", and there is no post-operative ward. Moreover, the hospital suffers from the same water supply problems as most of Koror, i.e. it has running water for only 4 hours per day. As a result, it is commonplace for there to be no running water for surgery, for bathing patients, for making facilities sanitary or for operating the flush toilet facilities. Rainwater collected from the drainpipes is often stored for use in such circumstances.

These completely unsanitary and unsatisfactory facilities endanger the health and lives of patients on a daily basis. Patients on life-support systems are totally vulnerable to the hospital's deficiencies. Furthermore, the lack of adequate medical treatment facilities forces Palau to spend hundreds of thousands of dollars per year to refer patients to hospitals in Guam or Hawaii, as described elsewhere in this Appendix.

The U.S. Corps of Engineers has agreed that McDonald Memorial Hospital is in immediate need of renovation. Palau's 5-year C.I.P. Plan for Basic Infrastructure Needs did not address medical facility requirements, even though the United States has financed the construction of new hospitals in Truk, Ponape, Kosrae and Yap in the past 12 years and is scoping the construction of hospitals for the Marshall Island and the Northern Marianas. The deteriorated state of McDonald and the increasing frequency with which patients must be referred to facilities outside of Palau illuminate the critical need for additional funds for the renovation, estimated at $3,000,000. Construction of an entirely new facility would be likely to cost at least $6,000,000; by way of comparison, Ponape's hospital finished in 1977 cost approximately $5,400,000 (1977 dollars).

While approximately $3,000,000 in funds for renovation of McDonald Memorial Hospital will eventually be necessary, Palau's absolutely essential need for FY 1982 for this purpose amounts to $1,000,000. This amount would be split as follows: $500,000 for immediate repairs to McDonald and $500,000 for A&E work concerning the ultimate renovation of the entire facility. Appropriation of this amount would be sufficient to begin the work required for the wholesale rehabilitation of Palau's inadequate hospital facilities.

D. FUEL COSTS: Essential Budget Addition: $2,500,000

Palau urgently needs an additional $2,500,000 to accommodate almost certain increases in diesel fuel costs in FY 1982. Presently, Palau is totally dependent upon diesel generators for electric power production, the result of decisions made by the United States as trustee. Interior has requested $2,300,000 to cover all utilities costs in Palau in FY 1982, which includes a $247,000 increase over FY 1981 levels designated specifically to provide for rising fuel costs; unfortunately, this amount is still woefully inadequate. By August, 1981, diesel fuel will cost $1.34 per gallon in Palau, and it is likely to average $2.00 per gallon over the course of FY 1982. Based upon this anticipated fuel cost and the estimated demand for power, Palau's total fuel costs for operation of the power generators in FY 1982 will be $4,709,526; reduced by the anticipated collections for power use, Palau's fuel costs alone will still exceed Interior's request for FY 1982 for Palau's entire utilities budget by approximately $1,400,000.[3/] Indeed, actual fuel costs incurred by Palau in FY 1981 exceed Interior's FY 1982 request for Palau's entire utilities budget by more than $568,000, even though the cost per gallon of fuel was significantly lower in FY 1981 and Palau will need more than 200,000 additional gallons of fuel in FY 1982.

Palau has taken all measures within its power in recent years to provide for its rising fuel costs with amounts originally budgeted. Through a concerted effort of increased maintenance and conservation in FY 1981, Palau reduced fuel consumption by 22 percent while simultaneously increasing power production by 8 percent. Moreover, Palau doubled its billing rates to customers for electricity in FY 1981 and will increase user charges by approximately 50 percent in FY 1982, despite the fact that the rate charged in FY 1981 was already twice as high as the amounts charged by other Micronesian entities.

The $2,500,000 special fuel reserve fund requested by Interior for FY 1982 for the entire TTPI is not sufficient to cover these anticipated fuel costs increases. Palau's estimated deficit for fuel costs over Interior's FY 1982 request would alone exhaust this fund.

[3/] Table A below contains all figures noted herein regarding fuel costs.

TABLE A

	FY 1980	FY 1981	FY 1982
Fuel Costs	$ 1,939,070	$ 2,868,529	$ 4,709,526
Gallons Consumed	2,742,092	2,140,694	2,354,763
Costs Per Gallon	$0.71	$1.34	$2.00
Kilowatts Generated	17,648,860	19,173,000	21,090,300
Charge Per KW	$0.03	$0.065	$0.09
Collections	$ 256,603	$ 697,897	$ 1,062,951

E. OPERATIONS AND MAINTENANCE:

Essential Budget Addition: $2,000,000
Necessary Budget Addition: $3,500,000

Palau requires an additional $3,500,000 in FY 1982 for maintenance expenses connected with its existing Capital Infrastructure and Equipment, consisting of government buildings, roads, bridges, water and sewer systems, electrical generation and transmission systems, airport, motor vehicles, and other miscellaneous public facilities and equipment. Palau's present Capital Infrastructure and Equipment represent a substantial investment by the United States that will deteriorate at a rapid rate if additional funds for operations and maintenance are not forthcoming. Long term viability of these existing facilities and equipment, whose replacement costs are extremely high, should not be sacrificed to save relatively insignificant sums in the short term.

Palau now has in place a Capital Infrastructure worth $11,753,512, which will require $1,400,000 in FY 1982 to maintain (12 percent of value). Also, as of December 31, 1980, Palau had in progress new construction of Capital Infrastructure facilities worth $23,980,000, which will require $2,000,000 to properly maintain in FY 1982 (5 percent of value).[4/] Moreover, Palau has Capital Equipment worth $10,000,000, which will require $900,000

[4/] The difference in percentages used to calculate maintenance amounts reflects the varying age and degree of deterioration of the respective facilities and equipment.

worth of maintenance in FY 1982 (9 percent of value). The sum of these required amounts, $4,300,000, exceeds Interior's request for O&M for Palau for FY 1982 ($800,000) by $3,500,000.

While use of standard percentages for calculating operation and maintenance amounts yields a figure of $3,500,000, Palau realizes that in times of austerity lesser amounts must be allocated for non-essential items. Maintenance on certain items of Palau's Capital Infrastructure and Equipment can be deferred temporarily without risking damage and/or serious deterioration. However, set forth below are maintenance amounts for various items of Capital Infrastructure and Equipment which are absolutely essential for FY 1982; these amounts total $2,000,000, a $1,500,000 reduction from the necessary maintenance budget addition.

1. Water/Sewer System Maintenance: $1,000,000

These funds are necessary to assure continued workability of Palau's water transmission and waste water facilities.

2. Road System Maintenance: $750,000

These funds are necessary to purchase, operate and maintain (1) road paving, repairing and cleaning equipment, and (2) an asphalt plant currently in place in Palau, the only source of such material in Palau. Otherwise, the new roads recently built in Palau will deteriorate and the monies expended to pay for these roads will have been wasted.

3. Power Generator Maintenance: $250,000

These funds are necessary for maintenance and spare parts for Palau's antiquated diesel fuel generators.

F. ROAD SAFETY: Essential Budget Addition: $100,000

Palau needs approximately $100,000 in additional funds to erect guard rails along those portions of its road system which cross water and steep embankments. Although Palau received funds for road improvements through its 5-year C.I.P. Plan for Basic Infrastructure Needs, no provision was made for the necessary guard rails. To date, several fatalities and numerous injuries have been caused in part by the lack of guard rails along dangerous portions of Palau's road system. Palau requires $100,000 in additional funds to immediately install these protective features.

II. ECONOMIC/SOCIAL/POLITICAL DEVELOPMENT ACTIVITIES

A. NEW GOVERNMENT ADMINISTRATION:

Essential Budget Addition: $250,000

The Republic of Palau needs approximately $250,000 in FY 1982 to create and finance a ministerial structure to enable it to discharge its new governmental responsibilities. With the approval of Palau's constitution by popular vote on July 9, 1980, a new constitutional government was installed in Palau. This new government must assume many duties and provide many services previously funded through the budget of the Trust Territory Headquarters. Presently, the new government has five separate ministries - National Resources, Justice, Social Services, Administration and State (external affairs).

At the time of the Presidential budget submission to Congress the organization of the new government in Palau had not been established, and consequently the budget provides no funds for creation and operation of the new structure of government in Palau. If Palau is to begin launching programs designed to foster self-reliance, as envisioned in the Compact of Free Association, then funds for the expenses of organizing the new government to operate efficiently must be provided. Otherwise, funds will be poorly applied and problems similar to those experienced under U.S. administration (e.g. poorly designed water system) will continue. The Republic of Palau does not want to repeat the errors of the past. However, to avoid those errors an efficient ministerial structure costing $250,000 must be established.

B. LIVESTOCK/FEEDMILL PROJECT: Essential Budget Addition: $120,000

These additional funds are essential for the continued operation of the Livestock/Feedmill Project, an experimental program for the production of cattle for food in Palau. Originally funded by Trust Territory Headquarters, this program is three years old and already more than one hundred head of cattle are present in Palau. The management and operations of the program have been transferred from Trust Territory Headquarters to Palau, yet there is no funding provided in the FY 1982 budget. Palau needs approximately $120,000 to keep this program viable. Without these funds, the livestock will disappear.

C. EDUCATION: Necessary Budget Addition: $100,000

These additional funds are necessary for administrative and supervisory measures necessary to promote educational development in 26 public elementary schools and one secondary school. It will provide for (1) increased fuel and maintenance costs for the school transportation system (consisting of both buses and boats), (2) salaries of five additional classroom teachers, and (3) the increased cost of books, tools and other scholastic instruction materials.

D. TRANSPORTATION: Necessary Budget Addition: $6,970,000

1. DOCK REPAIR: Necessary Budget Addition: $50,000

Palau needs these additional funds to repair existing dock facilities so that they may accommodate ships desiring to use the main Port of Palau. The functioning of the Port of Palau is essential to the continued economic development and eventual self-reliance of Palau, goals to which the United States is committed as trustee for Palau. Through its 5-year C.I.P. Plan for Basic Infrastructure Needs, much-needed improvements were made at Palau's main dock to provide for increased container storage. However, no provision was made for necessary repairs to the dock side, and an estimated $50,000 is needed to ready the dock side to accommodate Palau's trade and transportation needs for the immediate future.

2. TRANSPORTATION BUREAU: Necessary Budget Addition: $920,000

Palau needs these additional funds in FY 1982 in order to (1) create the capability within the Transportation Bureau of the Ministry of National Resources to properly exercise certain functions transferred to it by the Transportation Division of Trust Territory Headquarters (estimated cost: $138,410), and (2) operate and maintain the M/S Micronesia Princess upon transfer of title from Trust Territory Headquarters to Palau (estimated cost: $775,873).

Trust Territory Headquarters recently held a conference for the purpose of organizing the distribution of TTPI-owned ships. Palau requested and most likely will receive title to the M/S Micronesia Princess; however, no operating budget exists for FY 1981 or FY 1982 for this vessel to transfer along with it. This situation is not the same as that faced by other entities in the past: in the last two years, both the Marshall Islands and the Federated States of Micronesia have received title to vessels accompanied by transfer of operating budgets. Consequently, Palau needs and deserves additional funds with which to operate this vessel.

Moreover, Palau needs additional funds with which to staff and operate its Bureau of Transportation and its Divisions of Maritime, Public Land and Air Transportation. These entities will hereafter provide services and perform functions presently funded through Trust Territory Headquarters.

3. AIRPORT IMPROVEMENTS: Necessary Budget Addition: $3,000,000

These additional funds are necessary to finance improvements to Palau's main jet airport. Increased air transportation is essential to Palau's continued economic, political and social development, and improvements to the Palau Airport's passenger handling facilities are critical to attracting expanded air service to and from Palau. Moreover, the United State may be a direct beneficiary of such facilities through bilateral defense agreements with Palau.

The 5-year C.I.P. Plan for Basic Infrastructure Needs provided for certain improvements to the runway at Palau's aiport. However, even when these modifications are completed (scheduled for March, 1983), Palau's runway will be able to accommodate only medium size jet aircraft no larger than Boeing 727s. Moreover, there will be no modern navigational aids, no aircraft maintenance facilities and the airport "terminal" will still consist of a thatched roof structure with a dirt and gravel floor.

These air transportation facilities simply are not sufficient to allow for necessary economic development. For example, Palau views tourism as one of the best means presently available of moving towards economic self-sufficiency. However, the potential for development of tourism will be severely restricted by the total absence of adequate passenger facilities. Air transportation also is Palau's most effective communications link to the outside world, yet increased scheduling of regular air service is unlikely unless airport facilities are greatly improved.

The specific improvements needed at Palau's airport are (1) an airport terminal with appropriate radio and electronic navigational aids (estimated cost: $4,000,000); (2) aircraft maintenance facilities (estimated cost: $2,000,000); and (3) an additional runway extension of 2,000 feet to comply with safety limits for handling large jet aircraft (estimated cost: $8,000,000), for a total estimated cost of $14,000,000. For FY 1982 it will be necessary to outlay $3,000,000 (terminal: $2,000,000 for A&E and site development; and runway extension: $1,000,000 for A&E.)

As trustee for Palau, the United States has responsibility to foster economic development in Palau as one means of helping Palau achieve self-reliance. Enhanced air transportation facilites are essential to that goal.

III. PROBLEMS IN ADMINISTRATION OF CAPITAL INFRASTRUCTURE PROGRAM

Fiscal Year 1981 is the final year of the 5-year Capital Infrastructure Program (CIP), designed to aid the economic development of all Micronesian entities and lessen their dependance upon the United States. Since its inception, the $232 million CIP ($45 million programmed for Palau) has been under the direct supervision and administration of the Officer in Charge of Construction (OICC), United States Navy. Unfortunately, CIP projects in Palau are less than 50 percent complete, even though the original term of the CIP is nearing its end.

Problems with OICC's administration of the CIP have surfaced as construction of the CIP projects has progressed. There have been an excessive number of "change orders", i.e., changes in designs of projects while they are under construction. The large amount of change orders indicates that the affected projects were improperly scoped or designed from the outset. This may be caused in part by the fact that OICC generally has assigned only junior grade officers to perform the supervisory and inspection tasks on CIP projects. Due to their limited experience, these lower rank officers have proven to be unqualified as construction managers, and as a result certain CIP projects suffer from faulty workmanship.

The Republic of Palau wishes to bring these problems affecting the efficacy of the CIP to the Committee's attention in the hope that remedial measures will be taken to ensure better administration and construction of CIP projects in the future.

ADDITIONAL COMMITTEE QUESTIONS AND PREPARED STATEMENT

Senator JOHNSTON. Would you or your counsel wish to add anything?

Mr. UHERBELAU. No, Mr. Chairman. But we would like to thank you for the opportunity with respect to the status report of the infrastructure. I was just shown the copy of the report this morning, and we would submit written comments on the report as requested by the chairman's committee through our President.

Senator JOHNSTON. Yes; thank you very much. Mr. Sutcliffe has been keeping us aware of the serious problems that you have, and we're certainly going to do the best we can to accommodate to them. Your health problems, your road problems, your water problems, your sewage problems are very difficult, and I think particularly at this time, it would be incumbent on us to respond to those needs.

Numerous written questions will be submitted for the committee record, and we will be getting those to you very soon.

We will also include a statement from Congressman John F. Seiberling in the record.

[The information follows:]

QUESTIONS SUBMITTED BY SENATOR J. BENNETT JOHNSTON

Fuel Costs

Fuel costs continue to be the single most pressing budget issue in the Trust Territory, which is 100% dependent on imported crude oil for its energy needs. Costs of fuel have risen 188% over the last two years and can be expected to increase again in FY 1982. You have stated before that you have budgeted only $10.4 million for fuel in FY 1982 and that, regardless of price increases, you do not plan to submit a supplemental. At the same time, the Secretary has stated he believes O & M is critically important. However, if no fuel supplemental is submitted, the only place the states and entities will be able to find the funds to cover increased fuel costs is from O & M.

Question: Isn't this working at cross purposes?

Answer: No. We originally stated that $10.4 million, which included user charges was the amount contained in the entities budget. This was adjusted to $10.1 million in the budget justification. In addition to that amount $2.5 million was provided for in a fuel cost reserve, thus making available $12.6 million for fuel. This amount would provide for the purchase of 6.3 million gallons of fuel even if the price rose to $2.00 per barrel.

Subsequently, in the revised FY 1982 budget fuel costs estimates were revised from the $12.6 million to $11.3 million. Of that amount $2.5 is to be held in reserve. The total amount would provide for an increase of 35% from the current price of $1.33 per gallon up to $1.80 per gallon, if consumption remained constant at 6.3 million gallons. It would also cover increases up to $1.71 per gallon (a 29% increase) if consumption increased to 6.6 million gallons per year.

In addition to the $2.5 million for the fuel reserve, the FY 1982 request includes O & M funds of $1.9 million for generator overhaul, and $3.0 million for special O & M in the entities. These amounts are above the funds budgeted by each entity for O & M.

Question: In lieu of such a distasteful scenario, wouldn't it be wise to create a contingency fund for fuel, and give the Secretary the authority to certify how much should be released based on price increases?

Answer: As stated above the $2.5 million is a contingency fund, and will be released to the entities by the High Commissioner based on further price or consumption increases.

Question: If you don't agree, why and please show precisely where the additional needed funds can be found if not from O & M or medical supply accounts?

Answer: As noted we do agree. That is why the fuel reserve, and the special O & M funds were requested. If all or part of the fuel reserve fund is not needed, it will be allocated to the three entities for other operating needs primarily in the O & M area.

Hydroelectric Feasibility Study

Question: Last year, Congress appropriated $250,000 to the Secretary to conduct a feasibility study for hydropower on Ponape. Although the Energy Committee has consistently requested the Department to send up a reprogramming request to allow funds to be used to study several sites, rather than just Nampil, and to stretch these funds as far as possible, to my knowledge no such request has been submitted. It is now well over 6 months into FY 1981. When do you plan to submit this request, a request the Secretary agreed to submit in his confirmation hearings? Why hasn't it been submitted?

Answer: At the time of the Secretary's hearing the Department was unaware that the Corps of Engineers had done a reconnaissance feasibility survey on various potential hydroelectric sites on Ponape in October 1980. Also a feasibility survey was done for the Navy by PAE International for potential hydroelectric sites on Kosrae in April 1978. The only area not previously survied was Palau. Since the amount of funds involved for the feasibility survey of Palau will cost no more than $10,000 a formal reprogramming request is not needed. The Corps of Engineers is performing the feasibility survey of Palau and will review and comment on the PAE survey done for Kosrae.

College of Micronesia

The revised budget request includes no funds for construction or even A & E work of new facilities for the Community College of Micronesia. FSM officials tell me that if some funding for initial work is not provided in FY 1982, the CCM will lose its accreditation from the Western Association. The Western Association has confirmed this.

Question: Do you plan to make any funds avialable for initial A & E work in FY 1982?

Answer: The current FY 1982 budget request does not include any funding for A & E work for the College of Micronesia.

Question: If not, what have you done or what do you plan to do to make sure that CCM does not lose its accreditation?

Answer: The High Commissioner has provided some funding for renovation of the existing college and dormitory facilities on Ponape. It is hoped that when the FY 1982 funds for the TTG become available that the required laboratory equipment needed to maintain accreditation can be purchased from funds provided by the three entities.

Hospital - Truk

The Truk Hospital on Moen is in desperate physical shape. One operating room has already been shut down due to bacterial infection resulting from leaks in the roof; the generating system is totally unreliable; the kitchen is closed down due to lack of physical repairs; and the building in general is in unhealthy physical condition.

Question: I understand from FSM officials that $1.4 million must be provided for sufficient repairs to be made to keep this facility open. Have you made any provision for this in your FY 1982 budget planning? If not, what precisely do you plan to do and when?

Answer: No provision was made for this project in the FY 1982 budget request. The High Commissioner has already a contract for $500,000 for Phase I of this project. This amount will provide for replacement of the leaking roof, and some mechanical renovation of the plumbing and electrical system. The balances of the funding needed to complete Phase II of the project has not been identified. Potential reprogramming actions will be considered as well as the availability of local revenues from the state and the FSM central government.

Hospital - Palau

While not as desperate, the Hospital on Palau is also in a state of bad repair. The main facilities were built by US Armed Forces and even the local CAT teams say that the wiring is so dangerous that it cannot possibly be fixed. Moreover, the incidence of post operative infection has risen dramatically due to use of window airconditioning units, rather than functioning central system in the operating room.

Although local officials have a good track record in attempting to keep up O & M work on this facility, and in fact used a large share of their FY 1981 O & M funds for stop gap work at the hospital, there is a limit to how much patch work can be done given the serious physical condition of this outdated facility. Moreover, the Palau Hospital acts as a referral center for many Yapese, who otherwise would have to go to Guam at considerable more expense, and also crowding facilities on Guam.

Question: Has the Administration given any thought to constructing a new hospital on Palau?

Answer: No, not at this time.

Question: What is your estimate of how much such a facility would cost and how much would be needed for initial A & E work in FY 1982?

Answer: Depending on the availability of funds, and based on current construction in the Trust Territory a new facility could cost between $10.0 million to $15.0 million. Initial A & E work based on the total costs of the project is usually 10% of that cost, and would run between $1.0 million to $1.5 million. However, Palau would not need an entire facility as the administration building and record sections are brand new. The construction of new wards laboratory, kitchen etc. could possibly be completed for $3 to $5 million if no new equipment is needed.

Territorial and International Affairs

The FY 1982 budget amendments contain no funds as I understand it for the Assistant Secretary for International and Territorial Affairs, and no nomination has been made by the Administration for this position.

Question: Does this mean that the Administration plans to abolish this position?

Answer: No. The Administration plans to continue the position.

Question: If not, when will a nomination be forthcoming and how do you plan to fund this position?

Answer: It is expected that a nomination will shortly be forthcoming. Funding the position in FY 1982 will come from available resources within TIA.

Communications

Last year, we provided initial funding for the installation of COMSAT, bringing communications facilities for the first time to the Trust Territory other than through the U.S. government. I understand, however, that in the FSM ground facilities - such as switchboards, etc. - are inadequate and that the system will not work as intended unless these facilities are improved. Particularly in the FSM, which is composed of so many divergent groups, it is critical to the survival of any cohesion that sufficient communications be in place. I further understand that approximately $2.7 million is needed to improve facilities such as a hospital communications system, power for the telephone exchanges, and personnel training.

Question: Do you have any plans to request funding to cover this?

Answer: No specific funding for the new FSM request is covered in the FY 1982 budget request. Funding for communication was provided in FY 1980 and FY 1981 to upgrade the current system including telephone hook up and exchanges. Solar power radios are on order for the outer islands and should be available and operating soon. Included in these projects were replacement of switching hardware and exhanges with renovated equipment.

Question: It not from where will these funds come?

Answer: This new request of the FSM is a further expansion of the communications upgrade efforts currently underway. In order to provide for this new request the FSM will have to use current local and DOI funds available including revenues derived from the communication system.

Question: Does it make any sense to install COMSAT if it won't be used within the entities, but only with a few linkages outside the entities?

Answer: The installation of satellite stations will provide telephone/telex communications between the state centers and world points and among the four states. Communication between state centers and outer islands will be via the high frequency system.

Questions Submitted by Senator Mark O. Hatfield

FOR VIRGIN ISLANDS HEARINGS

The below listed questions are enumerated in order as presented by Senator Hatfield. The answers to the questions although not totally complete are provided in the attached letter from the Commissioner of Public Works, United States Virgin Islands.

The March 20 issue of the Virgin Islands Daily News contains a story of the repair of two vessels, the Carpeake and the Waterhaul, under the authority of the Virgin Islands Public Works Department. The estimate for the repairs was about $22,000. Yet in the end, the legislature agreed to pay almost $750,000 for the repairs, while the crew spent 11 months and 16 days and another $31,000 in a plush Puerto Rican beach club awaiting completion of the repairs.

1. What is the normal procedure for a public works project award? Are they contracted? If not, why not?

2. Who is responsible for this incident? How could it conceivably happen that the government would accept a cost overrun of 3375%?

3. The Virgin Islands Daily News mentions that six crew members stayed in San Juan during the time the barge was being repaird. They say they had to be there for maintenance, when actually maintenance costs were included in the repair costs. What was the reason for their stay?

4. How can the government begin a public works project without funds on hand to fund it? Why were monies appropriated only after the work had been done?

5. According to the Virgin Islands Daily News there are no transcripts of the legislature's deliberations on the payment of this bill. They claim the bill "either never was produced or has mysteriously disappeared..." What is the system for maintaining records of this nature?

6. Why didn't they contract the water hauling to a private hauler since the costs of maintaining the two ships were so prohibitive?

7. Why did you continue to operate these vessels when former comptroller Darrell E. Fleming was quoted in the Virgin Islands Daily News as having informed you over 1½ years ago that the government should "take appropriate action to abolish this function and dispose of these vessels"?

8. The article asserts that "the Carpeake and the Waterhaul were frequently used to perform services for private parties..." which they didn't bill. Is this a fact?

9. Confidential documents, now in the hands of Justice Department investigators show that former comptroller Fleming found that "these vessels made several trips within the Virgin Islands, apparently without proper authorization, and may have been involved in the illegal deliveries of over 1.4 million gallons of water." Is this true? If so, are investigations still ongoing?

10. What are the projections for finishing the plants for converting salt water to potable water? Is there a contract on that? Did the government take bids before awarding the contract for the plants?

11. How can you convince us that continued U.S. government financial support of the Virgin Islands is appropriate in light of this incident?

August 31, 1981

Mr. Edgar Harthman
Acting U. S. Comptroller of the Virgin Islands
Office of the U. S. Comptroller
Box 7730
St. Thomas, V. I. 00801

Dear Mr. Harthman:

In response to your request today, I submit the following with reference to Senator Mark O. Hatfield's request for information dated May 18, 1981.

First, I should make it very clear that I have no knowledge of the incidents referred to other than as were revealed in the U. S. Comptroller's reports. I have served as Commissioner of Public Works since June 1979.

The normal procedure for public works project awards is dictated by the V. I. Code. The contracting officer for the V. I. Government is the Commissioner of Property and Procurement. Contracts are made for such projects or services as may be required. Required funds must be encumbered prior to contract.

Six crew members are reported to have remained with the barge and tug while these vessels were on drydock. Reasons given, for maintenance and security. I have no first hand knowledge of these reports, the person who served as Director of Utilities and Sanitation, to which Division this equipment is assigned, is no longer with DPW. The individual who served as Commissioner of Public Works is no longer with DPW. Certain records remain in the custody of the U. S. Attorney.

In an attempt to explain how an overrun could have occurred - the following is submitted. This is the procedure presently in effect.

(a) The barge "Waterhaul" and the tug "Carpeake" are required to meet U. S. Coast Guard and American Shipping Bureau's requirements to remain in operation.

(b) Drydocking and repairs are routinely required by both.

(c) Prior to drydocking inspections are requested to be made by the U. S. Coast Guard and the American Shipping Bureau to list the maintenance, repairs and replacements needed.

(d) The recommendations of the USCG & ASB are then submitted to the shipyards in Puerto Rico and Proposals for Drydocking and for completing the recommended repairs are requested.

(e) The proposals are reviewed by the Commissioner of Property and Procurement, and the ability to perform the needed repairs considered, the best (possibly the most economical) proposal is identified and contract for the maintenance is made. Funds are encumbered for the contract prior to entering into the contract.

(f) While the vessels are on drydock USCG & ASB conduct continuing inspections, recommending additional required maintenance if necessary. IF THIS HAPPENS, THERE IS ALWAYS A POSSIBILITY THAT THE FUNDS AVAILABLE MAY NOT BE SUFFICIENT TO COMPLETE REPAIRS under such circumstances, an additional appropriation may be necessary.

I am certain that copies of invoices for work done on these vessels can be secured from the subject shipyard. DPW records are, however, in the hands of the U. S. Attorney and are not available to me at this time.

To the best of my knowledge, DPW conducted water haul operations and contracts for other water haul operations were in effect at the same time. The equipment used by DPW is small and more suitable for servicing the needs of St. John and other small islands. The contractors usually operate larger equipment which barged water to the V. I. This was a critical period and I estimate that the water shortage demanded the operations that were being undertaken.

Review of DPW's requirements, the need to supply adjacent islands, the fact that availability of contractors is unpredictable with changing situations, the future needs for removal of solid waste, the present value of this equipment, all these have influenced a judgment to retain the equipment and charge for services in order to reduce or avoid excessive costs.

As I stated before, some of the Comptroller's findings gave me information on previous years and prior practices. These vessels are available for a fee--$100.00 per hour with a minimum of $200.00.

While WAPA now has water production plants in operation, DPW needs to have water barged to DPW tanks on St. John, as well as to adjacent islands.

I hope this gives a quick summary of my comments. I would be glad to review our records and provide more details when such records are returned by the U. S. Attorney.

Sincerely,

Arnold M. Golden
Commissioner of Public Works

STATEMENT OF JOHN F. SEIBERLING, U.S. REPRESENATIVE FROM OHIO

Mr. Chairman, and members of the subcommittee on Interior Appropriations: as chairman of the House Interior subcommittee with direct responsibility for the Trust Territory of the Pacific Islands (TTPI), I am submitting for the record my views regarding the fiscal 1982 budget for the TTPI.

First let me note that on Wednesday, March 11, 1981, the House Interior Committee approved a total budget of $87,878,000 for the TTPI. (This was $12 million down from the total of $99,878,000 that my Subcommittee on Public Lands and National Parks actually sought for the TTPI in fiscal 1982.)

Following is how we recommended that the total of $87,878,000 be budgeted: to the Reagan budget of $72,500,000 for the TTPI, we would add the following items:

To cover the increase in fuel costs, we recommended that $1,900,000 be added to the budget. As you will hear from the different individuals' testimony, fuel costs are playing absolute havoc with the budgets of all the political entities in the Trust Territory and an end to the rising prices is nowhere in sight.

In the last Congress, Public Law 96-597 was enacted. It contains a provision authorizing the Secretary of Energy, in consultation with the Secretary of Interior, to develop for each of the insular areas, including the Federated States of Micronesia, the Marshall Islands and Palau, a comprehensive plan on renewable energy resources such as solar, wind, hydropower, ocean current and tidal, and ocean thermal energy conversion.

Unfortunately, DOE failed to include any money in its fiscal 1982 budget for this project, and while it has come up with about $200,000 in reprogrammed money to begin the study, we are concerned that that amount will not take it very far and as you will hear from others, this is a crisis situation that demands immediate and aggressive action in seeking a solution.

To hasten the completion of these comprehensive energy plans, we are doing two things:

1. We have introduced a bill (HR 3659) that would include a provision to shift the total responsibility for development of these plans from the Secretary of Energy to the Secretary of Interior. We believe that by bringing the program back to Interior,

where it was in the House version of H.R. 8444 that became P.L.96-597, we can better control the speed at which the plans can be completed since the Interior Department is under our jurisdiction; and

2. We are seeking $1 million in fiscal 1982 for the study as set forth in P. L. 96-597.

Also, related to the energy crisis is one other add-on that we seek funding for, and that is $500,000 for a feasibility study for hydroelectric power generation in Kosrae, which is in the Federated States of Micronesia (FSM), and in Palau. It is thought that both of these areas have great potential for the development of hydroelectric power and that this should be explored as quickly as possible.

It might be noted here that money has already been authorized for such a study in Ponape, and hopefully the study is now underway. Its outcome is anxiously awaited as some of the Ponapeans in town for the hearings on the House side in May reported that Ponape's generators had been out a great deal this year and Ponape consequently had been experiencing blackouts most of the time in April and May. This is one more reason why alternative sources of energy must be explored. It also points up the need for maintenance in the TTPI.

Speaking of maintenance, the Interior Department has finally completed its comprehensive study on operations and maintenance in the TTPI, a seven-volume study. My committee has received a copy of this document which certainly should help all of us to make in future some highly informed decisions regarding the subject.

We're seeking another $1,778,000 for enhanced maintenance operations. This additional money is needed to cover the cost of overhauling the generators in the TTPI, hiring experts to train Micronesians how to maintain and operate everything connected with the infrastructure, training Micronesians, and stocking spare parts for machinery and equipment. (I might note here that the in-depth study which Interior just completed specifies that the public works budgets for all three entities need to be increased by a total of $8,876,000 for fiscal 1982 in order to provide adequately for operations and maintenance.)

Another $2.3 million we request for operations at the TTPI headquarters in Saipan and for the three entities of the FSM, the Marshalls and Palau. This money would restore the cuts in operations in the Reagan budget in such key areas as health, education and public works.

For the rehabilitation of the hospital in Truk, we seek $1.9 million. The hospital, which services all 39,000 people of Truk, is in critical need of rehabilitation. Its deterioration has reached the point where the building structure, electrical system, plumbing and equipment are all in terrible disrepair, thus making it impossible to provide hygenic conditions for patients in the hospital. We're sure you will agree with us that such a state of affairs is something the United States, as the trustee of these peoples, cannot tolerate, and we hope that your subcommittee will find the funds to correct this dangerous, not to say disgraceful, deficiency before it results in a public disaster.

And speaking of hospitals, in general, we are concerned because we hear that other hospitals, besides the one in Truk, are having trouble coping with leaky roofs, drug shortages, a lack of medical doctors and technicians, and a lack of maintenance funds and personnel, to mention a few problems.

We understand that the public health program which provided doctors and specialists and other medical technicians is being terminated out there and the impact on health services in the TTPI will be severe.

Moreover, the cost of medical referrals, that is, patients with complications who must be referred to a hospital outside the TT such as Tripler in Hawaii or the Guam hospital has been soaring. (After fuel costs, this has probably had the most adverse impact on TTPI budgets.) The problem needs to be explored to see if money couldn't be saved by taking such actions as upgrading the medical staffs of the TT hospitals so that fewer people would need to be sent outside the TT, and improving radio communications among the islands so that many medical expenses might be avoided by being able to communicate with experts when an emergency arises. We also understand that such diseases as leprosy and tuberculosis are on the increase in the TT but have no information on what is being done locally to cope with this.

For the victims of U.S. nuclear tests in the Northern Marshalls, we seek $300,000 for the Enewetak people for food costs and for the shipping of food to the Enewetakese.

For the Bikini people, we seek $2 million in rehabilitation funds. We understand that the last of the money appropriated for the Bikini rehabilitation fund is now being used to build a much-needed airstrip on the island of Kili, where most of the Bikini people live. This $2 million would cover such costs as those of food supplies, plantings, housing and any emergencies that might arise. In general, the money is sought for continuing life support for these people who, through no fault of their own, are unable to return to their home atoll of Bikini because of continuing high levels of residual radiation.

While on the subject of the victims of U.S. nuclear tests in the Pacific, we would like to touch on the subject of the health program Congress authorized in 1980 to benefit the victims of the four atolls of Bikini, Enewetak, Rongelap, and Utirik. The program was contained in Public Law 96-205, section (b)(1), which directed the Secretary of Interior to submit to Congress no later than January 1, 1981, a plan for the health care of the people from these four atolls. Due to some kind of bureaucratic internal squabbling, no such plan was ever submitted to the Congress by the outgoing Secretary of Interior of the Carter administration.

We would hope that as soon as the Reagan administration has nominated its selection for Assistant Secretary in charge of the Insular Areas, that this person would establish as a number 1 priority the task of getting the Department of Interior and the appropriate parties to work at producing the congressionally mandated plan for the health care of the peoples from these four atolls.

Additionally, the Department should establish criteria for determining whether any of the people of other atolls have been exposed to radiation from the nuclear weapons testing program.

In late 1979 several storms devastated Majuro in the Marshalls. We are requesting $3 million towards the repair of this damage, including fixing the shoreline and roads and unblocking the causeways. This is but part of the money it is estimated it will cost to restore Majuro.

For the College of Micronesia, two items are included in our request for additional funding: we seek $300,000 for the operations of the College and $400,000 for architectural and engineering costs for the construction of a new College of Micronesia in Palikir, Ponape. The College of Micronesia faces a loss of its accreditation later this year if some kind of commitment is not made to do something about the deteriorating facilities it is now housed in. (We have been informed that about a month ago the mens' dormitory at the College burned down so this simply adds to all their problems.)

In 1976 Congress authorized funds for the construction of a new campus for the Community College of Micronesia. For a variety of reasons -- lack of curriculum, lack of coordination among the three entities as to whether or not the College would be supported by all three, etc. -- neither the Department of Interior nor the Congress had sought funding for the school. However, this has now changed. We understand that the problems mentioned above have been resolved among the three entities and that the High Commissioner of the TTPI did seek funding for the school in fiscal 1982 and that he was supported by the Department of Interior, but that OMB removed the money. The committee believes it is time to make a commitment of money to the school and we are therefore seeking the $400,000 for the A/E work. We hope that this action will convince the Accrediting Commission of the Western Association of Schools and Colleges that Congress hopes to follow through with providing for an adequate and permanent campus at Palikir and that it will therefore not take away the College's accreditation this year or any other year, for that matter.

And that concludes the items that we are recommending be added to the Reagan Trust Territory budget of $72,500,000.

Before the trusteeship is terminated -- and it is likely that that may take place sometime in the next three or four years -- we believe it is essential that certain basic needs of the people of the FSM, of Palau and of the Marshalls be satisfied so that the

United States can say with pride and confidence that it has fulfilled
some
its responsibilities as trustee. To that end we still have/distance to go. We urge your subcommittee to handle these Trust Territory needs as a high priority matter, and be as generous as you can be in these fiscally constrained times.

SUBCOMMITTEE RECESS

Senator JOHNSTON. Thank you very much, gentlemen.

Mr. UHERBELAU. Thank you.

Senator JOHNSTON. The subcommittee is recessed.

[Whereupon, at 3:05 p.m., Thursday, June 4, the subcommittee was recessed to reconvene at the call of the Chair.]

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR FISCAL YEAR 1982

FRIDAY, JUNE 5, 1981

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, D.C.

The subcommittee met at 10:05 a.m,. in room 1114, Everett McKinley Dirksen Senate Office Building, Hon. James A. McClure (chairman) presiding.

Present: Senator McClure.

COMMISSION OF FINE ARTS

STATEMENT OF J. CARTER BROWN, CHAIRMAN

ACCOMPANIED BY:
  CHARLES H. ATHERTON, SECRETARY
  KEVIN KOPPER, BUDGET ANALYST, INTERIOR DEPARTMENT

PREPARED STATEMENT

Senator McCLURE. Good morning.

This is the time scheduled to review the fiscal year 1982 budget estimates for the Commission of Fine Arts, the National Gallery of Art, and the Bureau of Mines.

We will begin with the Commission of Fine Arts. The budget request for the Commission totals $173,000, a decrease of $112,000 below fiscal year 1981 appropriations.

Mr. Brown, if you would please introduce your associates, you may then proceed to highlight your opening statement, the full text of which will be included at this point in the record.

[The statement follows:]

Statement of J. Carter Brown

The Commission of Fine Arts is requesting an appropriation of $173,000 for its Fiscal 1982 operations.

This request reflects a reduction of $125,000 from this year's projected Commission and staff support expenses, and will provide for only a portion of the anticipated operating expenses for FY'82. The remaining expenses we hope to meet through private donations. The authority necessary to accept such donations will, of course, require additional legislation, and this is now in the process of being prepared by the Administration and will be submitted to you at a later date.

At a minimum we will need $75,000 of non-appropriated funds to maintain the reduced staff of three full-time and one part-time employees as authorized by the Administration, and if the current operations and staff of seven are to be maintained, as much as $147,000 will be needed. I should point out that this sum does not provide for the printing of the second volume of the Commission's study on 16th Street Architecture, which was a major feature of our initial budget submission but which has been postponed for the time being.

In the next few minutes I should like to mention briefly some of the highlights of the Commission's activities since we appeared here last year.

Pennsylvania Avenue continues to occupy a great deal of our attention. Western Plaza was completed last fall, and Pershing Park is about to open. Together they will provide a grand terminus to the western end of the avenue with the open public plaza complementing the densely landscaped park including a water feature, a refreshment stand and of course the memorial to General Pershing. Recently we reviewed a small scale study of his statue presented by the American Battle Monuments Commission, and it showed great promise of becoming a most fitting tribute.

We are still in the process of reviewing detailed plans for the Willard Hotel restoration, an undertaking that all of us are hoping can finally get underway in the near future. Detailed plans are also being looked at very carefully for the Quadrangle-Marriott development across the street from the Willard next to the National Theater. It too represents a major private investment, and when completed along with the other projects should result in a handsome addition to the Avenue.

Moving two blocks to the east, a local team of architects, Hartman and Cox, have shown us a very exciting plan for developing the entire square between Tenth and Eleventh Streets. The unique thing about the plan is that many of the old shop fronts will be saved and incorporated into the new scheme in a most imaginative way. I believe it will add a great deal of interest to the area by retaining some of the flavor of the past.

In the Market Square neighborhood across from the Archives, the Commission has continued to work closely with PADC on a number of small landscape and decorative mural projects intended to spruce up the area on a temporary basis pending the go-ahead on their very ambitious housing program. We also approved the relocation of Ben Franklin's statue, a landmark in this neighborhood for many years, to a much better location in front of the Old Post Office.

While on the subject of the Old Post Office, I would like to put in a good word for finishing up the adjoining IRS Building in the Triangle which forms a frame around the Post Office. When we looked at the restoration plans, we strongly recommended to GSA that they proceed with the completion of the unfinished ends of IRS which stand out on the Avenue and Twelfth Street like massive "sore-thumbs." The Commission was encouraged when GSA agreed and a first-rate design was chosen by competition to complete that portion of the Triangle. Unfortunately, the focus appears to have shifted from solving the immediate problem to a masterplanning effort involving the entire area south of Pennsylvania Avenue from sixth to Fifteenth Street. While there are issues here that certainly merit our attention, I sincerely hope it will not divert efforts away from removing one of the Avenue's more conspicuous eyesores as soon as possible.

I'd like to turn now to development in the private sector where there is a great deal of activity in parts of the city involving the Commission. In January we reviewed plans for the construction of four major buildings in the downtown commercial center of Washington on the north side of G Street between Epiphany Church in the middle of the 1300 block through most of the 1100 block. This site embraces the intersection of two metro lines and a number of stations and will include office buildings, a hotel and new facilities for a large department store.

The new Convention Center which the Commission approved a couple of years ago already is stimulating new private construction in the immediate vicinity, all of which adds up to a lively and dramatic revitalization of the traditional downtown. The Commission wonders if the recent proposal by the local business community to raise the height limits of the downtown commercial district is really necessary as an economic incentive. It's something we are going to look at very closely, and I should think the Congress would do likewise. So much of the appeal of this city is derived from our traditionally low building heights, the openness of our streets and the uniform skyline with the Capitol predominating.

The other main area of our concern over the last year has been the development of the Georgetown waterfront. The Commission has reviewed a proposal for a major commercial-residential complex situated quite literally on the banks of the Potomac just below K Street next to Rock Creek Park, although I should emphasize we did so with great reluctance in an effort to get the best possible design, in the event the project is given a building permit by the District of Columbia Government. The area should be included in our National Park System that presently covers all but a small protion of riverfront land in the Capital; and we so testified when we appeared before Senator Hatfield in support of his legislation (S.1495). As we pointed out at the time, this small parcel of land also happens to be one of the most beautiful spots along the entire stretch of the Potomac in Washington. Combined with the marked increase in density and congestion that will inevitably result from all the new construction just above K Street, it would seem clear there is a very compelling argument for the park. Unless Congress acts in the near future however, it will not be possible. The Commission has reviewed a great many developments in the Georgetown area over the past year, and the indications are that this is going to continue until all the buildable open space in Georgetown is filled. If this trend continues unabated, there is a very real chance that many of the attractive features that have made Georgetown a special place are going to be seriously diminished or lost altogether.

I might just mention one or two additional items before we go on to your questions: the Intelsat Headquarters plans were reviewed by the Commission at a recent meeting. The site, as you know, is up Connecticut Avenue at the International Center where a number of new chanceries are either under construction or planned. It is being designed by John Andrews of Australia who has produced a very fine scheme that we believe will be a good neighbor to the University of the District of Columbia Campus. We also have recently completed a review of final plans for a new memorial to the Signers of Declaration of Independence in Constitution Gardens. It is on a small island in the lake and should be a nice addition to the park.

Finally we have appeared on several occasions in opposition to District of Columbia legislative proposals that would increase commercial advertising in the public spaces of Washington, notably on bus shelters and the roofs of taxis. I regret to say we haven't been entirely successful in our efforts. The bus shelter advertising proposal became law last summer, although due to lack of funds nothing has come of it so far. The taxi advertising was defeated once; however, new legislation has just been reintroduced into the City Council, so we will have to go through the entire hearing process again. The Commission believes it is a mistake to relax the laws that have so long kept Washington relatively free of commercial advertising compared to many American cities, and I hope renewed efforts to pass this legislation do not succeed.

That concludes our summary, Mr. Chairman. In addition we are happy to submit a more detailed list of projects reviewed by the Commission for your information.

Thank you.

INTRODUCTION OF ASSOCIATES

Mr. Brown. Thank you very much, Mr. Chairman.

I have here, on my right, Charles Atherton, Secretary of the Commission of Fine Arts.

And on my left, Mr. Kevin Kopper of the Interior Department, the budget analyst assigned by the Interior Department to us.

Would you like me to highlight our overall statement?

Senator McClure. The statement has been placed in full in the record, and you may proceed in whatever way you desire.

Mr. Brown. Thank you very much, Mr. Chairman.

I, as one American at least, was immensely moved at the time of the Presidential inauguration when, thanks to the initiative of Senator Hatfield, the ceremonies were held on the west front and the new President very eloquently pointed out to a national audience, which watched on television, the setting in which he was making his remarks. The new President pointed out the extraordinary importance of this Capital City to all Americans and the camera followed his designations as he ticked off some of the great aspects of this city which make it what it is.

To take just the mall itself, one has a very moving example of what our national heritage is in urban terms. And I think it is particularly important to recognize that the mall is that way because of Fine Arts Commission review at almost every stage.

It started quite early in this century, under President Theodore Roosevelt, who sent in troops to demolish a privately owned railroad station that was desecrating the mall right at the foot of the Capitol.

But with the establishment of the Commission in 1910, all of the major decisions that have affected this great monumental core of the city have, under congressional mandate, been reviewed, and we think helped, by the Commission's participation.

If the Commission hadn't spoken up, it might well have been that at the foot of the Capitol here, on these beautiful grounds, landscaped by America's greatest landscape architect, would be the scene now of an eight-lane freeway, with traffic going by, great speed and noise, right here, as the symbol of the American way.

And when one looks to the left one sees the Air and Space Museum, which was designed completely with Fine Arts Commission input, and greatly improved we think.

The Hirshhorn Scupture Garden originally was designed to be a great trench across the middle of the mall, with modern sculpture sitting up half way, cut off in the middle by the edge of that trench; that was turned around.

In earlier times, the Lincoln Memorial and its beautiful reflecting pool were all worked out, and the Jefferson Memorial and, more recently, the Constitution gardens; with Fine Arts Commission review.

The Commission, working under congressional statutes, like the Shipstead-Luce Act and the Old Georgetown Act, has been very busy in this last year in reviewing other projects that have come before it, some of which exemplify, we think, the benefits to be derived by public-private cooperation.

We have, for example, some very exciting things happening on Pennsylvania Avenue, where the new park, containing the monument to General Pershing, was officially opened recently and is now heavily used by citizens and visitors; where the Willard Hotel hangs in the balance, but has potentially a great design for its preservation and could be a great ornament to the city. It is a great historic site.

The entire square between 10th and 11th Streets has a very exciting plan to develop it, as does the Market Square neighborhood. We note also the saving of the Ben Franklin statue, and development in other places in the city like the project for four buildings in the downtown commercial center on the north side of G Street, which will be close to a Metro stop and has now major Commission input behind it. All will be designed in ways that we think will enhance the city, so that not only there, but on the Georgetown waterfront, where some of the proposals have been more controversial, the Commission has been the Congress appointed watchdog, to try to keep the historic value of that part of our capital intact.

You will see that the budget request significantly decreases the level at which the Commission would be allowed to continue, however. We are here to testify to that.

Senator McClure. Thank you very much.

We appreciate your testimony and your highlighting of some of the area of very great interest. And also, I might say that I appreciate the work that you have done. This is a beautiful city, and I think the activities in which you have been involved have help maintain and enhance that beauty. And I think we're all grateful for that.

Mr. Brown. Thank you, Mr. Chairman.

Senator McClure. In a recent letter to the committee, language was proposed which would allow the Commission to accept private donations in order to support Commission activities at a level higher than that anticipated in the budget request.

Will you make any effort to have that legislation passed by the proper authorizing committees of the House and Senate, or do you plan for the Appropriations Committees to provide you with the necessary authority?

Mr. Brown. I would imagine the plan is—on the part of the administration—is that this could be done as part of the Appropriation Committee's process.

Senator McClure. There is a growing tendency on the part of many to resist legislation on appropriations bills, and some might claim this is legislation.

Mr. Brown. Well, this is a tactical question, in which your wisdom may be extremely relevant, but we are not really in a position to comment except to carry out the proposal on the part of the Office of Management and Budget.

Senator McClure. If such authority were granted, would you initially retain all seven staff members at the beginning of the fiscal year? Or would you reduce staff and rehire as private donations came in?

Mr. BROWN. I think this decision would have to be made in light of how successful we would be in finding private support.

Senator MCCLURE. When you say "how successful," do you mean you have carryover balances or just promises?

Mr. BROWN. Well, we would hope to have enough moneys in hand, obviously, to continue these people on the payroll. We have perhaps the smallest agency in the entire U.S. Government. We feel that it is very lean and streamlined. We are lucky in that we do not have to have a large bureaucracy to run it, since we have the ability to take advantage of people already in place in the Department of Interior. So that our small staff is there to carry out the work of the Commission from day to day, and they involve people to do the necessary research on the historic aspects of some of these delicate questions that come before us, so that we can make informed judgments and recommendations to the President and to the Congress as to the position of these buildings.

There is sort of an economy of scale in a very large organization. You know, in a small one, there is sort of an irredicable minimum. You have to have someone there to answer the telephone and send someone there to man the ship if someone else is on annual leave. And you can just squeeze it down just so far.

Senator MCCLURE. Would you anticipate donations coming primarily from individuals or from organizations in the metropolitan area?

Mr. BROWN. We would hope it would be individuals, because I think if we went to organizations, particularly in the affected area, it could be a potential conflict of interest that might be deleterious to our work.

Obviously, the people who would be most willing to put money into this would be the people who it would affect, the developers and construction companies and so forth. I would be very skittish about heading in that direction.

Senator MCCLURE. Whether it's individuals or organizations?

Mr. BROWN. That's right, individuals as well. And I think that is one of the one of the inherent difficulties with this concept, that this is a Federal review body representing the people of the United States. And to the extent to which individuals who have private interests somehow, in ways we might not even be able to see, might have reasons for wanting to be generous—at least to the extent to which this is a dangerous approach, and it might be a problem.

Senator MCCLURE. Do you have in mind a minimum level of contributions?

Mr. BROWN. Yes. I think the absolute minimum would be $75,000. I think below that the Commission would really have to fold up.

You notice already that we had to take out the line item for travel, since most of our Commission members, since it is a national Commission, live out of town and have to come to the meetings. If we can't get them to the meetings, we can't have meetings. And so there are some fundamental minimums. This would defer our publications program, which is a great shame; but we are very sympathetic to the overall pressures on the Federal budget and would like to do our share. And that I think is one area in which perhaps one could forestall or postpone an expense, so that the second volume, for instance, of this 16th Street study which we have underway could be deferred for this year.

Senator MCCLURE. I note that you have previously stated that a minimum of $75,000 is required to maintain the reduced staff and at least $147,000 to maintain the staff of seven; is that correct?

Mr. BROWN. That is correct.

Senator MCCLURE. As you pointed out, that would not cover the expenses of printing the second volume of the Commission's study on the 16th Street architecture; is that correct?

Mr. BROWN. That is correct.

Senator MCCLURE. What would the cost of that publication be?

Mr. BROWN. About $40,000.

Senator MCCLURE. So if you were to maintain the staff and include the printing, you're talking about $187,000?

Mr. BROWN. That's right.

Senator MCCLURE. Have you received any commitments for donations?

Mr. BROWN. We have one potential donor, who has made encouraging noises. It is a fairly elderly person, so as a long-range solution to the Commission on Fine Arts I'm not sure how that will add.

Senator MCCLURE. Well, I know that you've been in this business longer than I have. But encouraging noises are not bankable. [Laughter.]

Mr. Brown, it is widely acknowledged that you have well served the Commission and the city in your position as chairman. And I know that the next question is not really a question addressed at you, but a matter of information for the committee.

According to the law, the chairman is not to succeed himself in that position. You, of course, have done so, and I don't know whether there is any conversation now as to what the practice will be following this. Have you had any discussions or heard any discussions along that line?

Mr. BROWN. Well, I would have to check into the law. The first I heard of such an idea came in some newspaper article. But as far as I am aware—I am not a lawyer, and I realize that ignorance of the law is no excuse, but it seems to me that tradition has been, the first chairman was chairman for about 40 years. And the second chairman, who was Director of the National Gallery, also was there for another 18 or something. So that the tradition at least has been, since the beginning of the Commission, that the chair continues for continuity, but that he is not appointed by the President, he is elected from among the members.

Senator MCCLURE. You have heard no discussion concerning that subject?

Mr. BROWN. No. But we should look into it, because as far as our staff reports, there is no reason not to. But obviously we want to play by the rules.

Senator MCCLURE. As I indicate, I realize that since you are central to that discussion, it may be difficult for you to answer it.

The Commission continues to support the inclusion of the undeveloped portion of the Georgetown waterfront in the national park system. As we are now faced with a virtual freeze on new park acquisitions, particularly for those areas not yet authorized, what is the outlook for private development of the waterfront in the near future?

Mr. BROWN. Well, the outlook is we think either encouraging or discouraging, whatever your values are. The fact that funds do not seem to be immediately available for the support of that crucial area as part of the national parks system is the fact that is in the short term, and we feel the role of the Commission is to try to keep a kind of governing wheel on the decision process so that we can all stand back from the capital and look at it in longer-term units. We are defending a city plan which was done in the 18th century for General Washington, which took 100 years before many people paid much attention to it. We are in a city where the dome of this Capitol stood uncompleted for decades in a very difficult part of our history, where the Washington Monument stood incomplete for even longer; where Pennsylvania Avenue itself, joining symbolically the great branches of government, was mud, and——

Senator MCCLURE. At least historical preservationists didn't freeze it at that stage.

Mr. BROWN. This is a point we often make, Mr. Chairman. So I think one has to be patient.

The National Parks Service has made it possible for there to be a green necklace of park that starts up at Harper's Ferry and goes down past Mount Vernon. And it is a proper setting for the national capital.

Perhaps the most significant single piece of that waterfront is where the river bends and where one has a view out over the beautiful island that is preserved for all time as a bird sanctuary and a memorial to Theodore Roosevelt. And at that bend precisely is where a current developer would like to cash in on that view for the benefit, naturally, of his stockholders and the few people who would be able to afford renting either offices or living places there. We feel this is a national asset and should be made available to the Nation as a whole and that eventually the National Park Service will find a good use for it. And perhaps there is a Presidential memorial—if I might have the temerity to say that the Fine Arts Commission, given the proper perspective, there will be—it might be a memorial to President Reagan.

Senator MCCLURE. Are you looking at the private donations as a possibility for funding that?

Mr. BROWN. That would be a very fitting carrying out of this lobbying.

Senator MCCLURE. With the proposed decrease of staff from seven to three, which three positions would you retain?

Mr. BROWN. It would be the secretary and the assistant secretary, and then one clerical person; so that I think probably the secretary, who is an executive service level civil servant, would be ending up doing a lot of his own typing under this. But this would be the kind of level we would be reduced to.

Senator McClure. How will the Commission discharge its responsibilities with that kind of staff?

Mr. Brown. Well, I'm not sure in my own mind that it really even could. If you have a friend and you cut him in half, you do get the opportunity to choose which half you keep, but I'm not sure you still have your friend.

And I'm quite discouraged at the prospect of trying to make that tiny organization viable with only three people staffing it.

Senator McClure. In your discussions with the Office of Management and Budget, do you have the impression that the Commission is slated to be phased out, continued at this much-reduced level, or that this is only a temporary reduction?

Mr. Brown. Well, we haven't talked much about the future, beyond their original proposal, which was not a phasing out but simply a turning out of the Commission as of the end of September. The original budget predictions we were handed were zeros in all columns. We tried to mention the will of the Congress in setting this organization up and reinforcing it with subsequent legislation in various periods, but they said that wasn't anything we should worry about at the moment.

I think that this small body, which has performed at a great bargain to the U.S. Government, in that its expertise of the seven Commission members has been completely free, it has been contributed without any compensation by leading citizens and experts for seven decades now. I think it should be continued, needless to say.

Senator McClure. Is there some level between the original fiscal 1982 budget and the revised figure that would be more rational in terms of the Commission's carrying out the task for which it was established? And I'm not just asking the question which is rather obvious, that, well, if you had more resources, you could do bettter, which is so obvious that there would be no point in the question. But is there a minimum level below which you have been forced to go? Is there a minimum level to be able to do what you really need to do that is above the figure that you have?

Mr. Brown. We think there is, Mr. Chairman. And it would be the one that we mentioned earlier. It would be an additional $75,000 over this amount. But I think we should call attention to the fact that there is another minimum which is, we feel, a more realistic one, which would be the amount that postpones the publication project, but which continues with the staff intact. They have some cumulative experience now to dismember that team which works very efficiently together, and then at a later date try to rerecruit either them or other people, I don't think that's a very efficient approach.

So, we did do a study of various levels, and $320,000—this would be almost a 10-percent cut, an 8-percent cut over the full request, and that would at least continue that team in place.

Senator McClure. Have you looked at the cross effects of private donations? There is certainly a limited pool of money available in the private sector. Do you have any idea of what you would be substracting from to get private donations here, or do you believe that it would be additional money?

Mr. BROWN. Well, it would be additional money as far as we're concerned.

I think the point you imply is an interesting one, in that those moneys might also be helping the society in some philanthropic way if they were not tied up doing the Government's business.

Senator MCCLURE. Well, I wasn't thinking so much of that as I was about the pool of philanthropy. What is likely? Is it simply to divert away from some other such act?

Mr. BROWN. That is really hard for us to judge.

Senator MCCLURE. Thank you, Mr. Brown.

NATIONAL GALLERY OF ART

STATEMENT OF J. CARTER BROWN, DIRECTOR

ACCOMPANIED BY:

CHARLES P. PARKHURST, ASSISTANT DIRECTOR
JOSEPH G. ENGLISH, ADMINISTRATOR
CARROLL J. CAVANAGH, SECRETARY—GENERAL COUNSEL
HURLEY F. OFFENBACHER, CONSTRUCTION MANAGER
ROBERT C. GOETZ, TREASURER
WILLIAM H. ROACHE, BUDGET OFFICER

PREPARED STATEMENT

Senator McCLURE. If you would switch hats for a moment then, we will review the fiscal 1982 budget request for the National Gallery of Art.

The fiscal year 1982 budget request for the National Gallery of Art totals $32,777,000, an increase of $8.1 million over the fiscal 1981 level.

Mr. Brown, if you would introduce your associates, you may then proceed to highlight your opening statement, the full text of which will be included in the record.

[The statement follows:]

STATEMENT OF J. CARTER BROWN

Attendance at the National Gallery has been increasing in recent years to reach an all time high of 5,997,210 visitors during fiscal year 1980. This total represented an increase of 467,408 over fiscal year 1979. The primary reason for this increase has been attributed to the success of our special exhibitions program and continued public interest in the East Building. The added gallery space in the East Building and increased funding (Federal and non-Federal) have likewise contributed to this success.

Our fiscal year 1982 Federal funds budget request includes $4.1 million for the West Building renovation and restoration program approved by OMB and included in the President's budget for fiscal 1982. This program represents phase IV of the gallery's construction programs. Completion of this phase is now scheduled in 1989 with total costs now estimated at $36,713,000—$12,235,000 from trust funds and $24,478,000 from Federal funds.

The fiscal year 1982 Federal funds budget request, as amended by OMB, totals $32,777,000 and 823 full-time permanent positions. These amounts reflect a net increase of $8,126,000 and 40 full-time permanent positions over the fiscal year 1981 budget of $24,651,000 and 783 full-time permanent positions.

Ten percent ($817,000) of the total increase is associated with personnel compensation. This increase provides: $187,000 for mandatory within-grade and wage-board step increases; $119,000 in overtime services in support of building operations and special exhibitions (reprogramed from overall base pay); $290,000 reduction due to savings from lapses in filling full-time permanent positions; $272,000 to restore reduction of 2 percent base pay in fiscal year 1981 budget (per OMB Bulletin 80-8 dated March 12, 1980); $395,000 for the annualization of the current year pay raise; $150,000 to adjust base pay for transfer of funds to lands and structures in fiscal year 1981; and $16,000 reduction being the difference between the 1982 and 1981 Presidential budget revisions (per OMB Bulletin No. 81-11).

Fourteen percent ($1,166,000) of the total increase is required for the increased costs of rents, communications, and utilities. This amount consists of $1,080,000 to cover the increased costs of steam and electricity usage for all structures; $44,000 for the increased costs of telephone and postal usage; and $42,000 to cover the costs of additional photocopy machines, word processing equipment, and terminals in support of the gallery's computerized payroll system which is run under contract with the U.S. Treasury Department (TPPIS System).

Thirteen percent ($1,031,000) of the total increase is needed to cover the increased costs as well as provide for additional quantities of materials, supplies, and services, and travel and transportation in support of basic gallery operations. This amount consists of $38,000 for travel, $57,000 for transportation, $242,000 for services and $694,000 for supplies and materials.

Four percent ($303,000) of the total increase is requested in support of the gallery's special exhibitions program. This overall program has been a huge success as measured by the increase in attendance.

Three percent ($297,000) of the total increase is requested for furnishings and equipment for newly available areas and equipment for basic operations. This amount includes: $145,000 net reduction in furnishings and equipment for newly available areas from $295,000 to $150,000; $15,000 for photographs for our photo archives collection; $20,000 for books (in-print) for the permanent library collection; $12,000 for equipment for the conservation lab; $10,000 for locks; $125,000 for building and window glass; and $260,000 for machines, tools, and equipment for basic operations.

Fifty-five percent ($4,450,000) of the total increase is requested for lands and structures. This amount consists of $350,000 for a new transformer and $4,100,000 for the West Building repair, renovation, and restoration program.

The final 1 percent ($62,000) of the total increase is for the increased costs of printing and will allow for additional quantities of information booklets, calendar of events, extension service catalogs, gallery leaflets and other productions of the gallery—especially those associated with our special exhibitions program. These increased quantities are anticipated as a result of greater public visitations to the gallery as well as greater demand on the part of our outreach programs.

In summary, the appropriation for fiscal year 1982 is $32,777,000—a net increase of $8,126,000 over the 1981 budget. Comprising the total increases are: personnel compensation and benefits—$817,000; rents, communications, and utilities—$1,166,000; materials, supplies and services, travel and transportation—$1,031,000; special exhibitions—$303,000; furnishings and equipment for newly available areas and equipment for basic operations—$297,000; lands and structures—$4,450,000; and printing and reproduction—$62,000.

INTRODUCTION OF ASSOCIATES

Mr. Brown. Thank you, Mr. Chairman. I have here on my far right, Mr. Joseph English, the Administrator of the National Gallery. On my near right, Mr. Hurley Offenbacher, our Construction Manager. On my far left Mr. William Roache, our Budget Officer, and next to me here on my left, our Treasurer, Mr. Robert Goetz.

To highlight our statement, Mr. Chairman, I would like to call your attention first to a graph which is in our proposal, and there may be a copy there available to you. If you would turn to page 1–5, which pulls out, you have illustrated graphically what has happened at the National Gallery over the last quarter century, in terms of public service. The continuation of this growth curve in the last couple of years is something of a surprise to me. I expected when we opened the new building in 1978, which accounts for the steepness of this rise, in many ways, that we would have very high attendance levels perhaps, but only for the first year, as everyone in town wanted to make sure they could say they had been there.

But in point of fact, that does not seem to be the actual force that is generating these attendance figures. We have people from all over the country. We have taken some straw polls and found that in a typical week we have representatives from all 50 States and some 55 foreign countries, among our audience. And the fact that the attendance has continued to rise after the opening of the East Building encourages us in that we are serving a great national demand.

Part of this is attributable to the excitement of our special exhibitions program in the last year. We borrowed from one of the major private collections in Europe some old masters of the kind that most museums would not dare lend, a van Eyck, a Rembrandt, an El Greco. We had a very important show on Dutch 17th century painting which featured Rembrandt but put him in a wholly new context. We had a couple of American shows which have opened people's eyes to the greatness of American landscape painting in the 19th century. We had last summer an exhibition of Post-Impressionism which was immensely popular. We also had smaller more scholarly shows, such as the Picasso exhibition we had this winter.

We have just closed an enormously popular show devoted to the period of Alexander the Great, and, if all goes well, by the end of this month, we will open a major exhibit devoted to the great French sculptor, Rodin.

ACQUISITIONS

At the same time, through private generosity, we have been able to acquire other works of art for our collection. It surprises people, particularly our European friends who have museums that get large subsidies from their central governments for acquisitions, that our National Gallery has been built completely from the private sector, and that the collection, which is virtually priceless, has all been donated.

For the continuation of this program, we have started a fundraising capability, so that we will be able to go to the private sector and find whatever philanthropic dollars we can to do this one area which is not covered out of Federal appropriations, as part of the original agreement made between Andrew Mellon and the Federal Government, at the time that he gave what was probably the largest gift ever given by any individual to any nation.

We continue to spread the benefits of all of this to a very broad national audience through our Extension Service. Our submission shows an audience of some 7 million annually, which more recently has grown to about 9 million through the coming on stream of a new network in one region that is quite a prototype of what we may be able to do nationally.

We have brought up for you a catalog of the Extension Service wares, which we can submit, and have copies for your fellow members of the committee. This is just off the press, the latest edition, showing the kinds of offerings that we make available free of charge to the American public in terms of school groups and other groups which want to learn more about their national heritage.

Finally, I should mention that this was the first full year of operation of our new Center for Advanced Study of the Visual Arts, which is funded almostly completely out of the private sector. It is serving the educational process in this country by bringing scholars, critics, museum people from around the country and, in fact, around the world, to take advantage of the great resources here at the gallery, at the Smithsonian, at the Library of Congress, and not only perfect their research, but also carry into their teaching and, therefore, to younger generations across the land, the benefits of the resources that we conserve.

FUTURE GROWTH

Senator McCLURE. I am, of course, struck by your graph. Staff has also done a graph on funding, which looks a little like that. If you compare the latter two, you haven't done too badly on the funding side, as well as the increase on visits, but as you pointed out, there are a number of reasons for the increase in visitors. And you do point to increased funding as being one of the reasons that you have been able to do more and, therefore, have had more visitors.

Mr. Brown, the pending budget represents an increase of more than 30 percent above your present level of operations. While one-half of this increase is attributable to the first phase of renovation of the West Building, a review of the funding history of the gallery shows a 100-percent compounded increase every 4 years for the past 12 years.

Is there any reason for us to believe that this rate of increase will slow, or is it going to be maintained?

Mr. BROWN. There is a tremendous reason it will slow, in that you are talking about the steepest part of the growth curve. One thing that our attendance graphs show as we project out is that it must level out. There is a limit to the number that we can serve physically in that building, and the reason for the tremendous growth in those last few years has been primarily attributable to the growth of our physical plant. One should point out that the growth has been made possible by unprecedented generosity from the private sector. The East Building project cost $94.4 million, all of which was privately donated, and this has, therefore, made it possible for the growth of the gallery to a physical plant double the size that it was before that new building came onstream in June of 1978. The number of square feet has doubled, and so have demands for maintenance and operations, as the Congress put that new building under the original legislation and agreement made in founding the gallery as a joint public/private enterprise, and those new facilities have been subsumed under the general pledge.

Senator McCLURE. Will you expect some kind of leveling off in both the funding and a leveling off in the amount of increase in visitor usage?

Mr. BROWN. I think definitely, and particularly in the funding. The degree of that leveling depends a great deal on how soon we can get done with this final phase of remodeling and reconstruction, in that the experience has been that every year that work gets deferred the cost escalates and the more expensive it becomes. But if we can grasp that nettle and get on with it, I think the other demands will level off very noticeably and that it will be a level operation, and we can maintain a plateau.

The expansion from then on, I think, will be very efficient in terms of the cost/effectiveness, because it will be an expansion in the numbers of people served through our Extension Service, and through programs such as our National Lending Service, where we lend original works of art to other museums and communities around the country. The borrowers will have to bear the cost of that, in terms of the transportation and insurance, but we provide the art, and the benefit of the gallery to the Nation, as a whole.

That should go up increasingly and out of proportion with the cost to the Government.

BUILDING AND WINDOW GLASS

Senator McCLURE. Mr. Brown, going through your statement outlining the increases, one figure caught my eye as being a little out of character or a little out of place or perhaps needs some further explanation. On the second page you're talking about 3 percent of the total increase, and you're looking at furnishings and equipment, but down near the end that item was $125,000 for building and window glass. Building and window glass is not normally thought of as furnishings or equipment. Is there an explanation of that item?

Mr. BROWN. Well, it's hard to know exactly what to put it under. It caught my eye, too, I must confess, Mr. Chairman. And I asked our staff about it specifically and was reminded that we have had great difficulty in the last year or two with large sheets of window glass simply exploding on their own. They are safety glass. No one gets hurt, but you might remember that last year, one of two panels flanking the entrance into the West Building from the new plaza was boarded up with plywood for a long period during that year, and it was a great eyesore. And we are hopeful that no one does get hurt, so we have had to budget to take care of this. This also applies to the safety railings that we have around all of the bridges and staircases in the East Building. The architect specified that they be supported by glass, which is very beautiful. You can see right through them. And it is just a silvery ribbon on top that you hold on to. But there is one right outside my office, for example, which shattered mysteriously from one day to the next and will have to be replaced.

Senator McCLURE. Is that because the product itself is failing under normal usage? One hundred and twenty-five thousand dollars is not an insignificant amount. It might not be big in the total.

Mr. ENGLISH. It's often custom made glass, which makes it extremely costly to manufacture and laminate, and so forth.

Senator McCLURE. But you have no guarantee of service with that, even though it is very costly?

Mr. ENGLISH. We have typically a year's guarantee.

Senator McCLURE. A year's guaranteee?

Mr. ENGLISH. Yes, Mr. Chairman.

Senator McCLURE. And on the 366th day it shatters; is that right? [Laughter.]

I've been amazed. Years ago my father and I built a small law office building with a 20-year roof guarantee, and the 21st year it failed. I often wonder how they managed that.

But doesn't it strike you that $125,000 is excessive if you're just talking about the voluntary failure of glass?

Mr. ENGLISH. The only instance that I'm aware of, Mr. Chairman, where glass failed due to human activity, was a case where the Fire Department broke a curved piece of glass that we had to replace, and other than that, it has been spontaneous, when the building has been closed or when there was no one around.

SKYLIGHT GLASS

Mr. BROWN. We also have a great deal of glass in our skylights, Mr. Chairman, which the public does not normally appreciate, particularly in the West Building when all they see is marble walls. But the entire roof is made out of glass. It is like a monster greenhouse. It is actually made out of two layers of glass, because there is the outer skin and then there are the small lay-lights that bring it down to the scale of the pictures, and then in the course of a year, you have birds flying into it or problems like that.

So I imagine there is an ongoing amount for glass which is in this budget.

Senator McCLURE. Is this figure changing over the years, or is it relatively constant?

Mr. ENGLISH. We have had a higher rate of failure this past year, Mr. Chairman. It is just terribly hard to project. We would like to stockpile some of the more standard sizes, and we also are embarked on replacing a number of panes. Mr. Brown mentioned the West Building glass. I believe the figure was 3½ acres of glass skylight. Many of them have gotten cracked over the years and leak, and we are in an aggressive program of replacing those too. And it is just simply our best estimate as to what the total will be.

Senator McCLURE. Have you covered this as a separate item in past years?

Mr. ENGLISH. I think we did the first year we opened the new building. I am not sure, Mr. Chairman.

Senator McCLURE. I wonder if you would provide it for the record, if it doesn't take too much work. It is certainly not an item which justifies a great deal of time and effort. But I would be curious to know if you have carried this as a separate item, how that has varied from year to year.

Mr. BROWN. We shall supply that for the record.

[The information follows:]

Unfortunately glass replacement has not been carried as a separate item in our accounting records, but has been included in the broader category of other equipment. The amount of replacement as well as removal of glass to bring large works of art into the buildings has been growing, and approximately $28,000 has been required in the last 12 months for these purposes. We estimate that this is more than triple the expenditure of prior years since we occupied the East Building in 1978. Just one large pane of glass on the west facade recently cost almost $10,000 to manufacture and replace. Removal and subsequent replacement of glass to accommodate a large piece of sculpture for the Rodin exhibition which opens this month (June 1981) required an expenditure of approximately $7,000.

RENOVATION OF WEST BUILDING

Senator McClure. Approximately $1 million has been spent to date on the renovation of the West Building. When the cost study was completed, the total estimated cost was $13 million in 1978 dollars. The new figure is $36.7 million. Does that reflect any change in plans or just a change in estimates?

Mr. Brown. Mr. Chairman, I think it reflects both, and perhaps we could go into that in some detail, but I think it is an excellent question. The detail of our long-range program is on page 5–12 of the budget submission, and there was a cost estimate that was commissioned in 1977 to get our preliminary thinking as to what the cost of such a project might be. The largest single factor changing this estimate has been the delay and the realistic prognosis as to when this work might be able to be accomplished and, therefore, at what increased cost.

We had originally hoped to get at it right away, and do it all as nearly at once as it could, because that not only would have been the most economical, but it also would have been the most efficient from the point of view of inconveniencing the public and closing off parts of the building. This was not allowed to happen for a number of reasons. One, the Office of Management and Budget said, please do not put in these requests for such amounts, but spread them thinly over a larger number of years. And so we revised our estimates to go out to 1989 on the basis that we should be as open as possible with no surprises as to what the total tab for this might come to.

We projected with the best crystal ball we could what that cost might be. It may be high out at the far end. It's very hard to know what is going to happen to inflation rates that far out in the future. But the specific aspect of the deferral that hit us last year was that when the first major piece of this that we were ready to undertake was deferred by the Office of Management and Budget and in their letter to us of February 15, 1980, was specifically deferred to the fiscal year 1982.

We recognize that this already cranked in an increasing cost of perhaps $3.5 million by virtue simply of the cost of deferral.

Senator McClure. What item was that?

Mr. Brown. This was the renovation and reconstruction hunk of our request of the previous year, which got deferred by the Office of Management and Budget. This year they recognized that the longer one goes on that way the more expensive it's going to be to the Federal Government, and they came back recommending to the Congress that the amount requested be faced up to this year and the project got going.

The other basic reason for deferrals is more in our court, in that our hope that we would be ready to plunge forward in 1978 proved not feasible when we couldn't raise the private moneys to get going in that short a timespan. We were fortunate, however, in raising a considerable amount that has allowed us to proceed. And the sources of that private funding have now come to an end. The foundation which was primarily responsible for it has now gone completely out of business and all its assets have been distributed, and there are other reasons that I could go into why it isn't feasible to count on any more of that input.

So we are thrown completely onto the basic agreement between the donor and the government to complete this project. Now within the project itself there are other reasons which include an enlargement of scope, and if you wanted to break it down as to which element provides what aspect of the escalation, one might say that the deferral from the total expected, if we had been able to use January 1978 costs, has amounted to a considerable escalation. If we consider under this program the midpoint year to be about 1984, there is a chart on that original study which shows the implications of deferral. The total for the 1984 timeframe brings it already up to $20 million from the $12 million that we talked about in our testimony that year.

PRIVATE FUNDS FOR RENOVATION

But in addition to that, there are other factors. There is some $4,235,000 that are not included in this study, which we have been able already to accomplish with private funds but which adds along to this global figure of $36 million.

Senator McClure. Those changes are an enlargement of the plan?

Mr. Brown. They are in the whole rebuilding of our photographic services, our conservation labs which we were able to finance with a grant from the Kresge Foundation and the design for the West End lobby and provision for our publication services. The other major change from the projection that we reported to the Congress about 1977 has been the inescapable decision to face up to the death of our air-conditioning units and not try to nurse them along with Scotch tape and bailing wire. The original projection showed an amount for air-conditioning that was the phase 7 referred to in that testimony which was, in 1978 dollars, a meager $268,000 to try to keep the existing units going.

But with our experience in beginning the Project Breakthrough which is now under way, we found that these units simply could not be asked to spin out for future decades. Historically, it is a rather interesting point that the National Gallery of Art is perhaps the first building of its size in the world that was designed to be centrally air-conditioned from the beginning, and the Carrier Corp., put in a system that was very advanced for its day, but it was designed in 1939, and now in the 1980's those machines are wearing out, and so we have had to face up to the replacement of 17 units that are necessary to keep the humidity and atmosphere control within the tolerances demanded by these irreplaceable works of art.

We have also discovered that the original building had virtually no fire protection, and that we have had to look into what would make it safe for these large numbers of visitors, not to mention the collections.

And this has meant smoke detectors, sprinklers, the building and constructing of firewalls, and the lining of the existing ducts which go throughout all of this large plant with fireproof materials. The combination of those two will add $5 million to this project, and you will see that is overall, in our best estimate, you will see that in our budget request this year the air conditioning aspect is about $1.6 million, out of a total of $4.1 million which we are requesting.

There are a few other things that have escalated we did not include. These were just construction figures. There were no design figures. There is another $2.6 million over the life of the project.

Senator McCLURE. If I followed you correctly, and I hope I did, you indicate that the escalation because of delay, if we choose a midpoint year, would raise the cost from $12 million to $20 million and you have identified a major addition of $5 million and that brings us to $25 million. But your estimate is $36 million.

DESIGN COSTS

Mr. BROWN. Well, we must add also what is not included in the study which has been accomplished, the $4.2 million. And we should add the design, which is another $2.6 million.

Senator McCLURE. Well, they were part of the original element, were they not?

Mr. BROWN. They were not in what I was referring to in my testimony 3 years ago in this study of hard construction costs, as I understand it.

Senator McCLURE. Do you mean the $12 million was understated because it did not include those items, even though they are necessary parts of the cost?

Mr. BROWN. That's right. So this was my mistake then, and this makes it a very pertinent question as to why there is this difference; but the difference is all actual. We are facing—these are real costs. We are, however, not talking about this global program for now. What we are talking about simply is getting ahead with the doable portion of it next year.

Senator McCLURE. Mr. Brown, I understand that and I don't mean to belabor it. One of my concerns always has been, and has been for many years, that we have both responsibility and accountability in the estimates of costs. We constantly see estimates that are greatly understated. About the only ones that ever make the newspapers are the ones that are associated with the military expenditures, and then they generate headlines. But we see another underestimate of cost in many places—the Visitors' Center made one that was so grossly disproportionate that it did make the front pages for a period of time. I spent 2 years as a member of the Public Works Committee trying to find out who was responsible, and they artfully dodged for 2 years until they found out I was not going to forget it, and so they finally came up with an answer. It was an architect who had died the month before. [Laughter.]

Now, I suspect they may have been waiting for somebody to die that had been involved in it.

Mr. BROWN. Mr. Chairman, if it is any reassurance, because needless to say, our trustees are as eager as you are to make sure that what estimates we bring them are, in fact, realistic, I think that if anything, we may have erred in the other direction in coming before you with a projection that takes us out to 1989 and adds up to this very large figure of $36 million. But I think that now that we have had a chance to get some experience in the project, we are dealing with realities.

I would like to pass up to you some photographs that were taken yesterday, so that they are up-to-the-minute reports of where this project stands at the moment. And therefore, we are able to predict with some greater degree of accuracy what we are, in fact, talking about, because the last thing we want to have on our hands is something like the Visitors' Center problem.

Senator MCCLURE. Well, just hire an older, ill architect and you will always have your scapegoat put in place. [Laughter.]

MANAGEMENT OF CONSTRUCTION PROGRAM

I say that not to belabor the issue, but I do think that those on your side of the table and those on this side of the table have a responsibility to the taxpayer to make accurate estimates and try to live up to them.

Mr. BROWN. Well, the point is very well taken, Mr. Chairman. I would like to say as perhaps further evidence of our own competence, that our current construction manager who has given a great deal of study and thought to these figures that are our current estimate, is the person responsible for the construction with congressionally appropriated funds of the Air and Space Museum, which was a very large project which was brought in under budget and ahead of schedule. And his track record since he has been with us——

Senator MCCLURE. That should have made headlines, and I appreciate that.

Mr. BROWN. Our Operation Breakthrough has gone the same way. We are actually under budget.

Senator MCCLURE. When I mention the $7 million that apparently were spread between the figures that I extracted from that you have said in both the cost escalation because of delay and additions because of the items you had identified, there is in addition to that the $4.2 million in private funds which have been used to enlarge the project. That would bring us up to the $36 million estimate. But there was still that $7 million gap in there. That still only remains partially explained.

Is the new cost based on current dollars, or has a factor been added for anticipated future inflation?

Mr. BROWN. The latter, Mr. Chairman. We are very much hopeful that if the current predictions hold true, and if perhaps some of that could be turned around—these are only estimates—we would hope that we could accomplish it for less.

PRIVATE CONTRIBUTIONS

Senator McCLURE. In testifying before the committee on the fiscal 1979 budget regarding the plans for the West Building, Mr. Brown, you stated that it "will require enormous amounts of money, for which we hope to mount an energetic campaign to raise private donations."

From this statement, it seems that the initial intent was to fund the entire project from private funds. Was that the original plan?

Mr. BROWN. I'm not sure that it was. We wanted to see how far we could go in raising private contributions, and we were able to raise in excess of $12 million for this. It has now been decided by the trustees that their priorities must be in their fiduciary capacity, to put the fundraising efforts of the gallery, which are considerable and very broadly based, into the area of building the collections, because this is one area which traditionally can never turn to Federal support to help. So we therefore operate under our original statute which specifically talks to "protecting buildings and the contents thereof, and the maintenance and alteration, improvement and repair of buildings, approaches and grounds" within the Federal purview.

Senator McCLURE. Last year you mentioned three major gifts from the Mellon Trust, the Kresge Foundation, and from another donor. Have any other donations been received?

Mr. BROWN. No. But the other donor has allowed us now to reveal his name and it will be no surprise to you that his name is Paul Mellon. He has since pledged a major gift to be his gift toward this new capital campaign for acquisitions. And in view of the $95 million which he and his sister and their foundation have provided for the new building, we feel that well has been tapped about as far as we are willing to tap it.

Senator McCLURE. Will there be any attempt to secure other donations?

Mr. BROWN. For the building project, very little. There is one possible donor that we are in negotiations with, but it becomes a question, as usual, of their wanting a name attached and all kinds of things which are not permitted within the policy of the trustees, and it begins to get to be very meager pickings. We have been back now to the Kresge Foundation twice, and we believe that that welcome mat has been worn about as far as we are going to be able to wear it at the moment.

They, perhaps as you might know, are the only major foundation that we've been able to find which allows their grants to go into bricks and mortar. The other foundations all have policies that they have to go into programs.

FUNDRAISING FOR ART PURCHASE

Senator McCLURE. I would like to refer back to what you said earlier in 1979, that there would be an energetic campaign to raise private donations. You've gotten three, and you hope to have further addition to that of one more. Is that an energetic campaign to raise private donations?

Mr. BROWN. Well, those energies, Mr. Chairman, have been by order of our trustees, redirected toward an energetic campaign to raise private donations for the purpose of acquiring works of art.

Senator McCLURE. But you are doing that anyhow.

Mr. BROWN. Not really, no.

Senator McCLURE. But certainly at the time that the West Building renovation was started, you represented that there would be an energetic campaign to raise private donations not for works of art, but for the bricks and mortar. And you have apparently either abandoned that or changed your mind, or didn't mean it then.

Mr. BROWN. Our trustees have redirected these energies after we were able to raise $12.2 million.

Senator McCLURE. Did you call attention to your directors that you had made this statement and that if you were going to be redirected, you would be, in effect, redirected away from what you told the Congress?

Mr. BROWN. I'm not sure that I did, Mr. Chairman.

ADMISSIONS AND VOLUNTARY CONTRIBUTIONS

Senator McCLURE. I don't know that it would have deterred or changed their minds, had they known what you said, but perhaps they don't care.

Discussions have been held with other members of the committee and yourself concerning the possibility of charging a nominal admission to the gallery. While we needn't go into that again, have you considered providing gallery patrons with a convenient opportunity to voluntarily contribute to the West Building project?

Mr. BROWN. We haven't, because these are the same patrons that we are very much hoping to get to contribute toward the acquisition of works of art. We have, really, two programs there. One is a national collectors committee that we have formed, so that we would get annual dues from a body of donors that would provide moneys for this purpose.

Senator McCLURE. I am not speaking of the patrons in that sense.

Mr. BROWN. You mean patrons in the sense of John Q. Public?

Senator McCLURE. Yes, the users. The general public. The millions of people who visit.

Mr. BROWN. Well, we have always been very careful to observe the original agreement which was made at the instigation of the Congress, whose idea it was at the time of the original discussion in the legislative history of the founding of the gallery, that the buildings would be open and all of the activities in them would be regularly exhibited free of charge. And this has been our mandate.

Senator McCLURE. It has indeed, and I am not talking about making a charge. I am speaking of the opportunity to make a voluntary contribution.

Mr. BROWN. A system——

Senator McCLURE. I don't have to contribute to my church, but if I go to church they give me an opportunity to contribute.

Mr. BROWN. Well, we could look into this further, Mr. Chairman. In our discussions so far we have felt that there now is a common practice in the museum field in which that church analogy has specifically been used and——

Senator McClure. I'm not talking about the approach of raffling off a painting.

Mr. Brown. Many of our colleagues in the museum profession now have a system whereby voluntary contributions are solicited at the door. These systems involve a ticket office and a suggested contribution. Just try and get past that ticket office without making their suggested contribution; it is technically voluntary, but the moral weight is there to the extent that it becomes virtually an admissions system.

Senator McClure. I wouldn't want to see us go that far. I think that would break faith that we have had, and I think one of the conditions of the founder—I think we have followed that for a good many years. But there is something short of that that could certainly generate some flow of income.

Mr. Brown. Wonderful. I would be happy to take your suggestion back to our board of trustees at their next meeting.

Senator McClure. There ought to be some way in which the people who have been inspired, and I think many are who visit there and are inspired by what they have seen, and out of that inspiration they might feel a desire to make a contribution if they didn't have to go home and try to figure out a way to do it. That inspiration fades quickly, the farther they walk away.

Mr. Brown. They get their opportunity, of course, each April 15.

Senator McClure. That's not voluntary. [Laughter.]

If you're talking about involuntary contributions, there is nothing that is more marked than that on April 15. [Laughter.]

EQUIPMENT FOR RENOVATED AREAS

In the narrative accompanying the budget request for the renovation project there is no mention of equipment. Based on our experience with the Smithsonian, once space is remodeled, there remain significant costs in providing the equipment for the new areas. Has the cost of equipping the West Building been included in these estimates?

Mr. Brown. It has not specifically, but we are very hopeful that they would be extremely low. We have had high equipment costs in connection with the East Building because the East Building is deceptive in terms of its square footage. Over half of it is an office building, and we have had to provide equipment for people to be able to sit down and work in that.

When we come to galleries, there is very little in terms of furnishings and equipment that go into that. We consider the exhibition aspect within the space of the exhibition as part of our exhibitions program, and so there are moneys asked for within those contexts that would take care of labels or lighting, or things that have to do specifically with the exhibits.

Senator McClure. That would be a part of your budget request or your budgets for the future years?

Mr. Brown. That's right. It would not be——

Senator McClure. Are they larger than normal in annual expenditures, or would you categorize those as normal annual expenditures?

Mr. BROWN. I think they would be quite normal, yes.

Senator MCCLURE. Will they enlarge your normal annual expenditure?

Mr. BROWN. To some extent, I suppose, at the startup.

Senator MCCLURE. How much?

Mr. BROWN. We can try to give you an answer for the record.

Senator MCCLURE. Would you do that, please? Because I think that we are getting involved in something which is going to have an expense, and we ought to have an estimate of what that additional expense is going to be.

[The information follows:]

In its budget submission for fiscal 1982, the gallery has requested $150,000 for furnishings and equipment. Starting with fiscal year 1983, the gallery does not anticipate any specific increases for furnishings and equipment for the newly renovated areas of the West Building. Instead the gallery plans on absorbing any furnishings and equipment costs for the renovated areas in our regular equipment, lands, and structure budget.

In fiscal year 1983 our Planning Office estimates expenditures of approximately $85,000 to equip conference, docent, and eduction areas as well as 11 renovated galleries. For the remaining fiscal years of the renovation program (1984–89), the Planning Office currently estimates total expenditures of about $160,000 to equip all remaining newly renovated gallery, office, and work areas.

FEDERAL AND PRIVATE SUPPORT RATIO

Senator MCCLURE. Through fiscal year 1976, non-Federal funds provided over 50 percent of the gallery's support. By fiscal 1980, the Federal share had increased to 70 percent of your total budget. As proposed, the fiscal year 1982 budget would further increase the Federal contribution to 77.5 percent of your total budget. Has any serious consideration been given to determine the proper ratio between Federal and private support?

Mr. BROWN. This is highly philosophical, Mr. Chairman. And I am not sure that it ever could be reduced to a formula. I think we have to understand some of the philosophical and historical bases of these numbers. They are spelled out for you on page 9–6 of our budget submission, in which we tabulate year by year what the Federal and non-Federal input in dollars was to our ongoing budget.

This table does not differentiate between capital expenses for buildings and ongoing running expenses, which primarily are considered to be the responsibility——

Senator MCCLURE. Could you provide a similar table that makes that differentiation?

Mr. BROWN. We can, indeed.

[CLERK'S NOTE.—That information is being retained in the subcommittee files.]

Mr. BROWN. As you will notice, the big bulges are in these very generous donations for the construction of the buildings. But to put it all in perspective—and here again are numbers that we are not able to give you—but I think at least on the verbal level they must be referenced, because otherwise one has a totally false impression of what this partnership really consists of.

These numbers on page 9–6 do not include works of art, and that, of course, is the major aspect of what the institution is all about. Certainly the major aspect is what in financial terms the collection represents, not only historically, in terms of the values which they were given, but, given the rise in the cost of works of art, the current market value, that is if they ever went on the market—but they don't have a market value, because they are national treasures. The total value of that art would so dwarf these Federal inputs that we would be talking, really, billions, in terms of the art.

Senator McClure. I have no question concerning that. But I am questioning the other aspects, in which the Federal share has changed.

The Federal share—and you appropriately indicate that the works of art are not included; as the table indicates, the value of lands are not included. But, when there is a pronounced shift in the proportions, we have to ask ourselves: Why this shift in proportion? And if, as a matter of fact, that is a result of calculation, or the result of accident, or, as a matter of fact, whether it is appropriate or is inappropriate. If you would provide that additional information, I would appreciate it, and I think perhaps it might be well that you and the trustees have some conversations concerning whether or not you think that is an appropriate change of direction, and one that is sustainable.

Not only has Federal funding increased dramatically, but when inflation is considered, the support received from private sources decreased even more dramatically. Have you determined that it is easier to come up here once a year to plead the gallery's cause than to sustain a vigorous private fundraising effort?

You indicated a little earlier people don't like to give for bricks and mortar. It is harder to get people to give for operation and maintenance than it is to give for a specific work of art. I'm certain that that is correct. Is this shift a result of that kind of resistance?

Mr. Brown. I don't think that it has to do with the ease factor, because it tends to be very difficult to raise the funds for the purchase of works of art, too, in that they become more and more out of reach in terms of price, so you have to raise more and more money in order to buy anything at all. I think it simply is the result of the fundamental economic forces at work in our country, whereby the responsibilities which the Federal Government undertook at the time that they received this priceless collection for maintenance and operation relieved the gallery at that time of the responsibility of that kind of funding, and therefore, allowed it to put its energies into the much more expensive kind of funding—of acquiring works of art.

What has happened to change these balances, in my judgment, is that the cost of maintenance, of operation, have gone up, with, first of all, the cost of personnel; and the cost-of-living inflators that are in the payment schedules; with the cost of energy, which is a very large component now, by virtue of the amount of steam and electricity and heat and light and so forth that go to maintaining these buildings; and the costs connected with construction, materials, and so forth.

Senator McClure. Certainly that is correct. From 1939 through 1976 a 50–50 division of private and Federal support held relatively stable through that entire period—not in every year, because there obviously were some very large gifts in some individual years.

But generally speaking, during all of the history up until the present day, all but the last 5 years, it was about 50 percent Federal-50 percent private, and it is in the last 5 years that the Federal share increased from 50 percent to 70 percent.

What would you do if the Congress decided to return over the next 5 years to the pattern that had preceded the last 5?

Mr. Brown. We would certainly say that the last 5 years are atypical; that those figures are grossly distorted by capital fund inputs from the private sector that had to do with bricks and mortar. And if you took some years, like the early 1950's, in which there weren't any building programs going on, and you did your percentages, you would find them, I think, very similar to the ones today.

But we will do an analysis of it.

Senator McClure. If you would do that, I would appreciate it.

ELECTRICITY AND STEAM COSTS

A 25-percent increase is requested to meet the costs of electricity and steam. While we realize some adjustment is required for rate increases, why is it that the gallery continues to increase utility usage? For instance, from fiscal year 1980 to fiscal year 1982, you show an increase in steam usage from 124 million pounds to 150.9 million pounds, which is a 20-percent increase in demand.

Mr. Brown. Well, I think these are excellent questions. And they have to do with primarily the numbers of people that we are serving, and the utilization of the buildings. And also, with provision for extremes in the weather, which have hit us recently, and which we realize, now, prudently, we have to budget for.

The electricity is related not only to the air-conditioning costs and so forth, but to lighting. And there, we are in the process of providing adequate lighting in the West Building up on the main floors so that these great masterpieces can be seen.

Senator McClure. Is your power supplied by Pepco?

Mr. Brown. Yes.

Senator McClure. Do they have an inverted rate, a summer rate?

Mr. English. I don't believe so, Mr. Chairman.

Senator McClure. Are you on a meter basis, or contract basis?

Mr. English. A meter basis. With special time-of-day factor, which adjusts for usage at peak periods, in the middle of the day.

Senator McClure. It adjusts them up or——

Mr. English. Yes.

Senator McClure. Has that changed in recent years?

Mr. English. Yes; it changed about 1½ years ago, I believe, Mr. Chairman.

Senator McClure. There is a penalty rate in some areas. I know Pepco does have a penalty rate in the summer, that increases the cost as you increase your usage—in order to discourage air-conditioning.

Mr. ENGLISH. That is correct.

Senator MCCLURE. You cannot be discouraged.

Mr. BROWN. Unfortunately, we sort of have to hold faith with future generations that we will maintain the temperature and humidity.

Senator MCCLURE. It seems to me that when Pepco has such a penalty rate, if they made a rate table adjustment to indicate a desire to decrease the use of air-conditioning, that whatever the rationale may be for that, that that might be applicable some places, but it certainly ought not to be applicable to you. It might be in your office space in the East Building, but certainly not for the balance of your buildings.

And it would seem to me that the utility might take that into consideration in the negotiations for the rate available to you.

Mr. BROWN. This is quite an interesting idea, Mr. Chairman. I think we ought to pursue that.

Senator MCCLURE. Do you think the increase in usage for steam has been solely attributable to the increase in the numbers of visitors?

Mr. BROWN. Also in increasing the amount of square footage that is utilized. We have more areas to heat.

Senator MCCLURE. In the last 2 years?

Mr. BROWN. Because of these moneys that you have seen going into opening up parts of the West Building that previously weren't on stream.

Mr. ENGLISH. That is essentially true. We have had areas that have been unair-conditioned, while they have been modified, and they are now back in service, and as we occupy or renovate the areas of the west end, they presently are not air-conditioned during the renovation work, and that will add——

Senator MCCLURE. Is that true of the heating load as well?

Mr. ENGLISH. Yes.

SPECIAL EXHIBITIONS

Senator MCCLURE. Almost $2 million is requested for special exhibitions, an increase of almost 20 percent above the fiscal 1981 level. Previous hearings indicate that the gallery has long held the opinion that the Federal Government should pick up the entire cost of the special exhibitions program.

What portion of this program will be funded with private resources in fiscal 1982?

Mr. BROWN. We have some projections for you, Mr. Chairman. We have spent a great deal of our time in trying to find private sector support for our exhibition program, and we are delighted to report that we have been quite successful.

We feel it is not in the interests of the Federal Government or the American people for us to become so dependent on the private sector that the criteria applied to our exhibition program should be reduced to a kind of box office, lowest common denominator, tabloid level. And this, I think, is the grave responsibility that we have, to maintain a mix so that while we have exhibitions that are immensely popular with the public, we are also keeping faith with the scholarly and quality criteria that go into selecting what we exhibit and what we don't.

The percentages are spelled out there on page 4–10. And these are only estimates. We try to do better, if we can. But what we need in advance is some basic idea of where we stand, because these exhibitions must be negotiated, often, with foreign governments, a long time in advance, and this means that corporate budgets are often not prepared, and it takes a certain amount of courage to embark upon these, and we would like to have some assurance that we will be able to carry out any specific project.

Senator McClure. Well, I look at 4–10 and the table that you provide there. While in 1977 the actual was 59 percent Federal, the actual in 1978 and 1979 and 1980 were 74 percent, 72 percent, and 72 percent. Then I look at 1981 and 1982 and you have 56 percent and 60 percent, but those are estimated.

Mr. Brown. That's right.

Senator McClure. What I'm asking you is are you going to hit that estimate, or are you going to again revert to what has happened in 1978, 1979, and 1980, in actual experience?

Mr. Brown. Well, this is our best thinking as to what we will be able to do, Mr. Chairman.

Senator McClure. Maybe a year from now we will be reviewing to see how well you have done on your estimates.

Mr. Brown. As well you might.

Senator McClure. Increases have been requested annually for special exhibitions. Is there an optimum level or is that simply a function of how much money can be raised?

Mr. Brown. I think there is an optimum level. I think we are at it, and have been for about a year. I think the increases now are fundamentally inflation-type increases.

Senator McClure. So you don't expect to increase the numbers of special exhibitions?

Mr. Brown. We simply don't have the staff to do that, Mr. Chairman. We are faced with the most inflationary aspects of the basic inflationary thrust in putting on these exhibitions, because of our reliance on energy, both to transport the objects here and to buy construction materials to present them.

And I was delighted to see very recently that perhaps energy costs might be going down a little bit.

ACQUISITIONS OF WORKS OF ART

Senator McClure. In fiscal 1980, 452 works of art were acquired. How many additional works do you anticipate collecting this year?

Mr. Brown. That goes into——

Senator McClure. Is it whatever you can get?

Mr. Brown. That is what the Harvard Business School used to call an unknowable statistic. But it is fundamentally that, and it is so hard because quantity is not our primary concern. The quality factor is the key one as far as we are concerned.

It depends a little bit on our ability to raise private funds. I think until this fund drive matures, we are going to be in a fairly restricted stance over the next couple of years, until we can get some kind of endowment going, which then will throw off an income from which we can purchase these objects.

Senator McCLURE. What is your capacity to store works not on display?

Mr. BROWN. It is very good, particularly since the addition of the East Building, and the addition of space in that Connecting Link in between. Conceptually, you have to realize that the East Building is the part that sticks up and looks like the amount that was added—but in point of fact, it is really one of two new buildings that were added to the original neoclassical structure. That plaza is simply the roof of a third building, which goes out underground beyond the plaza to the extent of our property line. In there, we have storage space.

We have two or three other places for storage space. Part of the building funds that we are requesting are allowing us to rationalize this storage capability, to make some of it available to interested people who come seeking loans for the National Lending Service.

Senator McCLURE. Do your future plans call for expansion of storage space at an unrelated or detached location?

Mr. BROWN. We would hope to avoid this just as long as we could. It subjects works of art to changes in temperature and humidity, and gets them out of the conservation watchfulness and the scholarly review of our staff.

Luckily, although the 452 sounds like a lot of pictures, or a lot of objects, it is not all paintings. The vast majority is in the graphics field, and one drawing or one print, although some of them can be very expensive these days, doesn't take up any more storage space than a piece of paper.

And so the bulk of our collection of some 70,000 objects now, the bulk is in just one part of one floor of the East Building.

Senator McCLURE. Well, I don't expect that your collection is going to be static. Nor should it be. It ought to be dynamic, and it ought to be growing. But that also imposes some physical demands, as well as the other things.

Mr. BROWN. We're very aware of these, Mr. Chairman, and we're very lucky among the national galleries in the world to have the highest proportion of works of art on view to works of art in storage of virtually any great museum. And there are many reasons for this.

One is that we are so young relative to the other national galleries of the world, but also because we have been very choosy as to what we accept. And now, in addition, with this newly invigorated program of lending, it means that we can become a national resource and make these things available outside of Washington, which does help impact less on our storage space.

RESTORATION

Senator McCLURE. Was restoration work required on any of the works acquired in fiscal 1980? And if so, what was the cost of the work?

Mr. BROWN. We can try to give you some allocation of that. It is often the case that some attention is necessary. And in addition, with the escalation of interest in borrowing our collection, often a picture will be in a condition which is all right if you leave it where it is but if you are going to ship it to Europe, you have to give it conservation attention.

And this has been a tremendous hardship under the hiring freeze in that department, because we feel a responsibility of conserving our collection. We finally had to raise money from a private foundation to tide us over, but that money had a timetable on it that said that it was given in expectation that we would be able to go back to the normal Federal support of these positions within a couple of years.

Senator MCCLURE. Would you provide for the record the breakdown, or an estimate of that restoration work, on the newly acquired objects?

Mr. BROWN. We would, indeed.

[The information follows:]

Some restoration was required. This work cost about 5,000 dollars' worth of full-time permanent staff time, and was not an added cost, but required staff time taken from regular ongoing conservation work, as follows.

In the fiscal year 1980 the National Gallery of Art acquired through Board action 452 objects, all but 51 of which were graphic works on paper. Of the total number only one required major conservation treatment—a painting about 400 years old by Grimmer, a fine gift, intact but its surface dirty and insecure. One conservator spent about 12 week's time (spread over 1 year) on this painting. This job was quite unusual in being slow and difficult, though rewarding. All other works treated out of the 452 took an aggregate of 1 week's work divided among various conservators—a sculpture by Milles, a watercolor by Wyeth, two painting by Davis, and some graphic works.

The work on the Grimmer was done by a regular junior staff member at GS-9 salary, on top of regularly assigned work, whose time over 12 weeks equals $4,291. The aggregate of the balance comes to about $800.

This is minuscule in proportion to the value of the 452 objects, but of course does take valuable staff time which otherwise must be devoted to the ongoing inspection and treatment of the permanent collections, the inspection and occasional treatment of hundreds of works of art received annually (an unusually high 17,000 items in 507 shipments in fiscal year 1980) and the same for outgoing loans (over 2,000 in 511 shipments in fiscal year 1980). Scientific research must also be accomplished by this same staff to determine the kinds of materials used in the art being treated, so that the method of treatment can be established with safety and the treatment itself affirmed as feasible.

These laboratory staffs (painting, objects, paper, textiles, and analytical) are hard pressed and have a substantial backlog at all times.

CIRCULATION OF FILMS, SLIDES, AND TAPES

Senator MCCLURE. The gallery develops, produces, and circulates films, color slide programs, and video tapes to schools, libraries, public television stations, and other organizations free of charge. An additional $233,000 is requested for this activity in fiscal 1982. A nominal charge of $5 per booking would cover this requested increase.

Why shouldn't the schools and educational television stations help to defray the expenses of this program?

Mr. BROWN. Well, although the rental itself is free of charge, Mr. Chairman, the cost impact on the borrower is sometimes considerable, given their budget.

They have to pay for the shipping of this back to us; and they have, if there is an insurance factor, they have to pay that. And our experience is that the public schools are under such tight budgetary restrictions that this is already difficult for them to come up with.

Senator McCLURE. Do you think $5 more on the charge—whether it be very small or very large—is going to make a difference in whether they do or do not avail themselves of it?

Mr. BROWN. Well, we could explore the elasticity. Now, we have to recognize that that would also impact our accounting. So it wouldn't be $5 net. But we could certainly look into that possibility.

Senator McCLURE. All of the $233,000 increase is for supplies and materials for the extension program. $225,000 of the increase is to replace deteriorated copies of the "Civilization" series of films. An additional $65,000 is requested under "other services" for the cost of distributing the "Civilization" series.

Did you decrease your budget for "other services" when you terminated distribution of the "Civilization" series?

Mr. BROWN. I'm not sure of the answer to that question. We can look into it.

The problem is one that we have run into before, with this series, which is absolutely extraordinary in terms of its quality and popularity. And that is that the prints go out, but when they come back, they have to be checked; because in the process of being used, often they may have become scratched, they may have broken and some student has tried to splice them back.

All of that is hidden in the middle of the reel. And so we have to go through the process of checking each print, so that when it goes out again it is in proper condition.

But we will look retrospectively, to see how that impacted the budget.

[The information follows:]

The unique "Civilization" film series consists of 13 film titles per set. During fiscal year 1977 distribution of these sets had to be discontinued because the few remaining sets had worn out. At that time the budget for "other services", which includes funds for the distribution and servicing of all extension program materials, was not decreased. This is due to the fact that the demand for extension program titles has continued to grow and new titles had to be developed.

There are approximately 70 copies each of 90 different program titles currently available for national distribution. Included in the extension program's normal annual operating budget are funds for the continual replacement of these films, which have an average useful life of about 5 years.

The new "Civilization" series is currently estimated to cost $9,000 per film set and $4,700 per videocassette set. Being subject to the same degree of wear and tear as all the other film titles, the "Civilization" series film sets are expected to have about the same 5 year useful life as the other film titles. At that time additional funds will be required for replacement sets, to prevent suspension of the distribution of this unique and popular series, which still has many viable years before obsolescence.

FILM SERIES DISTRIBUTION

Senator McCLURE. If you have to replace the films, when will the new series be ready for distribution?

Mr. BROWN. I think they would be ready almost immediately, and we would have to defer the servicing of them until we could get up to speed with that.

But we have a mailing list that is reached by that catalog; an addendum to that would make the availability known right away.

TRAVEL

Senator McCLURE. Between fiscal 1980 and fiscal 1982, the funds requested for travel by the Director have increased 300 percent; travel for the Secretary/General Counsel has increased 420 percent; and travel for the Treasurer has increased 244 percent.

Could you explain these increases?

Mr. BROWN. Well, the absolute amounts of travel in the Secretary/General Counsel's office and the Treasurer's office are extremely small. We can give you the exact numbers. So those percentages may be misleading.

The art function is where travel impacts primarily, in that the proper finding of acquisitions, the properly scholarly documentation of the collection, and travel in connection with our special exhibition program requires a certain amount of moving around of expert people.

What we have been struck by is the per-mile increase in cost of this activity, by virtue of the very sharp rise in fuel costs and consequent transportation costs.

And it is something that has disturbed us. We have tried to monitor the travel of these people very carefully. We have cut back on the representation of the gallery at scholarly meetings and professional conclaves of various kinds. But there is an irreduceable minimum which we feel very strongly about, and which we deplore, it seems to cost more and more, as a result of the inflation factors.

Senator McCLURE. The figures are relatively small, but the percentage increase indicates not just an increase in the cost per trip, but an increase in the number of trips.

Mr. GOETZ. Mr. Chairman, if I may.

In the current year, in 1981, the Director's travel is $5,000; the Assistant Director's, excluding special exhibitions, is $11,000; for special exhibitions, it is $56,000, which includes extensive foreign travel, as you can appreciate.

The Administrator's entire office is $5,000. For the General Counsel's office, it is $2,000. And for the Treasurer's office, it is $3,000. The Treasurer's office historically doesn't use any. We put that in for our 25 people in accounting and data processing. It is mostly for local travel, if they go to training schools. The same is true for the Administrator's staff. It is basically for Government travel in the Washington area, if some is involved.

The General Counsel does get involved in some inter-city travel, in line with the legal work on the special exhibitions. Also, OMB has had a cut-back of 10 percent for the current year, which worked out to an 8-percent reduction. So that our original budget of some $100,000 was cut to $82,000. I have that in my monthly reports of travel.

Senator McCLURE. I understand those figures. I have those. But while those figures are small, the corresponding figures for 1980 are much smaller.

Mr. GOETZ. Yes, sir. And I think the main—there are two main reasons for the percentage increases, which are substantial:

The increased activities of the gallery—since the East Building was opened, particularly in the special exhibition area; and, of course, the adverse effects of inflation. The mileage allowance used to be 10 cents, and now I think it is 20 cents.

Senator MCCLURE. But when was the East Building opened?

Mr. GOETZ. 1978.

Senator MCCLURE. The figures I'm looking at are 1980 travel, compared to 1982 travel, so the opening of the building does not account for the difference in travel.

Mr. GOETZ. No. There, I think it is the increased activities, the number of special exhibitions. And, of course, we don't know what countries—to which countries our staff will be traveling. And also, I think the cost of jet fuel has increased 536 percent in the last 3 years.

Senator MCCLURE. Well, I'm quite familiar with the cost of travel. I do some of it myself. And I would suggest that mine has not gone up by 300 percent, or 420 percent, or 244 percent in the last 2 years.

Mr. GOETZ. Mr. Chairman, if I may, the total aggregate increase in the gallery's travel? Because every year, OMB usually cuts it. Travel has been one thing we have really not been able to get increased.

Senator MCCLURE. Well, I was just looking at the presentations that you gave us, that show us the travel costs in 1980, 1981, and 1982.

Mr. GOETZ. Well, for 1982, we have requested, true, a $28,000 aggregate increase in travel—from $92,000 in 1981 to $120,000 in 1982; and it has all been allocated to the Director's people, and most all of it is for the special exhibitions.

Senator MCCLURE. I understand that. But that is in the face of what you attributed—a cut-back by OMB of 10 percent; 10 percent less than $92,000 would be back in the $80,000's.

Mr. GOETZ. We currently show $82,000 for the current year. That is correct, Mr. Chairman.

Senator MCCLURE. But you've gone from $92,000 to $120,000; that's a 50-percent increase in one year, not a 10-percent decrease.

Mr. GOETZ. That is correct, and that was tied in mostly to—I think if you will look at the special exhibitions budget, I think you will find most of that travel is in the special exhibitions budget, which we discussed earlier.

Senator MCCLURE. Well, again, I looked at the Director's and the Secretary's and the General Counsel's and the Treasurer's budgets, and those associated with them.

Is the Treasurer's increased travel cost caused by special exhibitions?

PRIVATE FUND TRAVEL SUPPORT

Mr. GOETZ. Well, as it so happens, Mr. Chairman, at the gallery, any executive officer's travel is non-Federal. We do not travel on Federal status. Any trips I've taken for the gallery—they happen to all have been to the city of Minneapolis, and they were all in connection with an exhibition that was scheduled to come here from Russia. And the

Minneapolis Institute of Arts had the lead, and I went out on budgeting and forecasting, as did other members of the staff.

Senator McClure. That is the next question I was going to ask you. Is additional travel supported with private funds?

Mr. Brown. It is. Yes.

Senator McClure. In what proportion?

Mr. Brown. Only for the people who are paid out of private funds, the executive officers.

Senator McClure. Well, thank you very much, Mr. Brown. I appreciate your testimony this morning.

Some of the questions obviously leave some questions unanswered, and I hope you will be looking at those items, and be conscious of them.

Also, we will probably be asking at least some of them again.

Thank you very much.

DEPARTMENT OF THE INTERIOR

BUREAU OF MINES

STATEMENT OF DR. HERMANN ENZER, ACTING DIRECTOR, BUREAU OF MINES

ACCOMPANIED BY:

- **CHARLES B. KENAHAN, DEPUTY DIRECTOR, MINERALS RESEARCH**
- **DR. THOMAS A. HENRIE, CHIEF SCIENTIST**
- **DR. JOHN D. MORGAN, JR., CHIEF STAFF OFFICER**
- **JAMES COLLINS, DEPUTY BUDGET OFFICER**
- **JOSEPH W. GORRELL, DEPUTY DIRECTOR, OFFICE OF BUDGET, OFFICE OF THE SECRETARY**
- **ROBERT L. MAROVELLI, DIRECTOR, DIVISION OF MINERALS HEALTH AND SAFETY TECHNOLOGY**
- **DAVID R. FORSHEY, DIRECTOR, DIVISION OF MINERALS ENVIRONMENTAL TECHNOLOGY**
- **JAMES PAONE, DIRECTOR, DIVISION OF MINERAL LAND ASSESSMENT**

PREPARED STATEMENT

Senator McClure. We will now turn to the Bureau of Mines fiscal year 1982 budget request. For 1982, the Bureau is requesting $141.9 million for its major program activities. $2.5 million—that is 1 percent—over 1981 appropriations, to date.

The Bureau also has requested $800,000 in miscellaneous accounts in 1982.

Finally, the Bureau has been granted a 1981 pay supplemental of $2.9 million.

The lead witness for the Bureau is Dr. Hermann Enzer, Acting Director.

Dr. Enzer, would you please introduce your colleagues for us, and then you may proceed with your statement, as you see fit. Of course, the entire statement as presented, will appear in full in the record.

[The statement follows:]

STATEMENT OF HERMANN ENZER

We are pleased to be here today to present the Bureau of Mines budget request for fiscal year 1982.

The increasing international competition for many of the world's minerals and materials, when viewed in the perspective of their importance to the economic well-being and security of the United States, has given the Bureau of Mines reason to re-examine its goals and allocation of resources. We have carried out such a re-examination and have submitted a budget request for fiscal year 1982 which reflects this re-examination.

Being aware of the national concern over materials and minerals, Congress recently passed the National Materials and Minerals Policy, Research and Development Act of

1980. The act requires the Department of the Interior, among other agencies, to improve the information base of the Federal Government, including its coordination, and increase the level of research and development efforts on materials and minerals. Specifically, the Secretary of the Interior is to collect, evaluate, and analyze information concerning mineral occurrence, production and use from industry, academia, and Federal and State agencies; improve the capacity of the Bureau of Mines to assess international mineral supplies; increase the level of mining and metallurgical research by the Bureau of Mines in critical and strategic minerals; and improve the availability and analysis of mineral data in Federal land use decisionmaking.

The Bureau of Mines has been designated as the focal agency in the Federal Government for minerals data collection and analysis, and the Secretary of the Interior is to convene through the Bureau of Mines an interagency committee to coordinate and improve the minerals information systems of the Federal Government.

The fiscal year 1982 budget request of $142,710,000 for the Bureau of Mines is responsive to the need for targeted Federal action in acquiring adequate minerals information, performing competent minerals policy analyses, and carrying out an effective, balanced research and development program. It emphasizes strategic and critical minerals to a greater extent than in previous years. I would like to highlight the programs for you at this time.

HIGHLIGHTS OF 1982 BUDGET

Included in our request is $141,910,000 for the Mines and Minerals appropriation and $800,000 in budget authority for contributed funds. This is an increase of $2,482,000 over the 1981 appropriation enacted to date.

RESEARCH PROGRAMS

We are requesting a total of $107,661,000 for our research programs, an increase of $115,000 over the current 1981 appropraition.

In the mineral resources technology program, we are developing technological solutions to reduce import reliance on critical and strategic minerals through conservation, substitution, and increased recovery of minerals and metals from domestic resources. We are requesting $40,646,000 for this program, an increase of $14,456,000 over the current 1981 appropriation. Of this increase, $1,491,000 is needed for pay raise and other mandatory cost items. The increase of $12,965,000 is requested primarily to develop additional and improved technological alternatives to the extraction, processing, recovery, and recycling of critical and strategic minerals, including the search for viable substitutes. The funds will be used to advance the state of minerals science and technology ($6 million), to develop techniques for conserving domestic mineral resources ($1.7 million), and to provide for the development of our domestic resources through expanded research in the use of plentiful resources and in substitutes for critical and strategic minerals ($5,265,000).

The request of $54,700,000 for the minerals health and safety technology program, which is authorized by the Federal Mine Safety and Health Act, will allow continuation of efforts to improve health and safety conditions for coal and other types of miners. This is a decrease of $5 million from the 1981 appropriation enacted to date. Current level funding will be maintained in respirable dust research, while the lower priority and less critical elements of other areas will be reduced in scope or deferred.

Funding of $12,315,00 for the minerals environmental technology program will be directed toward technology needed to reduce the undesirable environmental impacts associated with mining and mineral processing. This is a decrease of $9,341,000 from the 1981 appropriation enacted to date. of this decrease, $8.6 million was used to offset increases in the mineral resources technology program to expand our efforts in the conservation, extraction, and recycling of strategic minerals from domestic sources. The remaining reduction results from the administration's revised budget based on the objective of achieving greater overall Government economy. Lower priority projects in the areas of mine waste control, process waste control, and special environmental problems will be deleted, but we will continue with our work on high-priority environmental projects.

To give you an idea of the type of projects our research programs are engaged in, I am proud to bring to your attention some awards that the Bureau of Mines has received in the past year. Each year, the Industrial Research and Development magazine honors researchers, innovators, and developers by selecting 100 of the most significant new products developed during the year. The selections are made on the basis of importance, uniqueness, and usefullness from a technical standpoint. In 1980, the Bureau of Mines received four of these awards for the following developments:

A two stage oxygen breathing system which allows the miner to carry a lightweight 10-minute unit that provides ample time to reach the central storage area where a 60-minute unit and the smaller unit are coupled together providing an uninterrupted supply of oxygen.

A lightweight, inexpensive nitrogen dioxide device for accurately measuring a worker's average exposure to this gas produced by diesel engines and in residual gases from blasting.

A cement-grouted roof bolt system that uses low-cost gypsum cement and yields superior protection from roof falls in underground mines.

A hydraulic borehole mining system that uses a high pressure water jet to erode ore and a slurry pump to bring the fragmented ore to the surface. It is a relatively low-cost method of mining certain small, low-grade deposits without using men underground.

MINERALS INFORMATION AND ANALYSIS PROGRAMS

We are requesting $34,249,000 for our information and analysis programs, an increase of $2,367,000 over the 1981 appropriation enacted to date.

For the data collection and analysis program, we are requesting $21,540,000, an increase of $1,938,000 over currently appropriated funds for 1981. This program collects and makes available worldwide information on approximately 100 nonfuel minerals. using this information, analyses are performed to provide input to policymakers, including assessments of international minerals supplies. This is one of the areas highlighted in the National Materials and Minerals Policy, Research and Development Act of 1980. The increase for this program will be used to carry out the data and analysis coordination tasks that I mentioned to you before.

Within the Department of the Interior, we are cooperating in the development of a critical minerals index which will be used as an early warning system. In this index we will assess both the risks of potential disruptions for critical minerals and the impact of disruptions on the U.S. economy. We plan to perform such an assessment at least once a year in cooperation with minerals experts of other agencies, and recommend measures through the Secretary to the White House which will improve our state of preparedness with respect to critical minerals.

The land assessments program provides mineral information for areas being considered as possible wilderness sites included in legislation or the Roadless Area Review and Evaluation (RARE II) being conducted by the U.S. Forest Service. The request of $12,709,000 includes no program increases or decreases for 1982.

CONCLUSION

I believe that the Bureau of Mines has developed a balanced program which clearly addresses national mineral needs, reflects a proper Federal role, and is consistent with efforts to effect overall Government economies. I would be happy to answer any questions that you might have.

INTRODUCTION OF ASSOCIATES

Dr. ENZER. Thank you, Mr. Chairman.

We have on our far right Dr. Henrie, who is our Chief Scientist.

Next to me, on my right, is our Chief Staff Officer, Dr. Morgan.

On my far left is Charles B. Kenahan, who is Deputy Director for Minerals Research.

Next to me, on the left, is Jim Collins, our Budget Officer.

We also have asked some of our senior managers to come here and provide some details on programs, if they are needed; and to amplify on some of our answers.

If you don't stop us, Mr. Chairman, what we would like to do is to give you a very brief summary of the statement that you referred to.

I would then like to ask Dr. Morgan to give us a brief presentation on critical and strategic minerals; not because we believe that you are unaware of the importance of these minerals to the United States, but because we have a major reprograming action in our 1982 budget, from certain activities in the Bureau to an area called Mineral Resource Technology. In that area, there is a major emphasis on strategic and critical minerals.

Senator McCLURE. Might I just suggest, in that connection, that I am familiar with the problem. The press table is unoccupied; you are not going to get any additional public understanding from that presentation. I don't mean to cut you short, because I appreciate the work that has been done in the presentation of this.

I very much appreciate the emphasis which you are putting on it. I say that only if there were some people sitting over at the press table, we would take the time for the full explanation, in the hope that at least some of them might transmit that information to the public, that needs to understand.

Dr. ENZER. We will proceed as you have indicated.

Senator McCLURE. Thank you very much.

BUDGET REQUEST FOR FISCAL YEAR 1982

Dr. ENZER. The Bureau of Mines activities and budgets can be put into two broad categories:

The first category is minerals research; the second category is minerals data collection, dissemination, and analysis, and land assessment with respect to minerals.

In the first area, in the minerals research program, we are requesting $107 million, which is an increase of $115,000 over the current 1981 appropriation.

In the minerals resources technology program, we are developing technological solutions to reduce import reliance on critical and strategic minerals, through conservation, substitution, and increased recovery of minerals and metals from domestic resources.

We are requesting $40 million for this program, which is an increase of $14.5 million over the current 1981 appropriation.

The request of $55 million for the minerals health and safety technology program, which is authorized by the Federal Mine Safety and Health Act, will allow continuation of efforts to improve health and safety conditions for coal and other types of miners. This is a decrease of $5 million from the 1981 appropriation enacted to date.

Current level funding will be maintained in respirable dust research, while the lower priority and less critical elements of other areas will be reduced in scope, or deferred.

Funding of $12 million for the minerals environmental technology program will be directed toward technology needed to reduce the undesirable environmental impacts associated with mining and minerals processing. This is a decrease of $9 million from the 1981 appropriation enacted to date.

Of this decrease, $8.6 million was used to offset increases in the mineral resources technology program, to expand our efforts in the conservation, extraction, and recycling of strategic minerals.

The remaining reduction results from the administration's revised budget, based on the objective of achieving greater overall Government economy. Lower priority projects in the areas of mine waste control, process waste control, and special environmental problems will be deleted; but we will continue with our work on high priority environmental projects.

In the second broad area that I mentioned, minerals information, we are requesting $34 million for our information and analysis programs.

For the data collection and analysis program, we are asking for $21.5 million; and for the land assessment program, the request is $12.7 million, which does not include any program increases.

RECENT RESEARCH ACCOMPLISHMENTS

One third thing that we thought we wanted to do is to discuss one or two of the major research programs that we are involved in in the Bureau of Mines. The reason is that this is the first time that we are before you, as chairman of the Interior Appropriations Committee; and we thought that we would like to show you some of the things that we are involved in.

Senator McClure. Well, why don't you run through one or two of those relatively quickly.

I have a number of questions with respect to the budget. While I am new as the chairman of this committee, I am not unacquainted with the activities of the Bureau of Mines, having been born and reared in Idaho, and now being over half a century old. I have spent most of that time in some contact with people who work in the mining industry.

Dr. Enzer. We are well aware of that. But every now and then, Mr. Chairman, we would like an opportunity to show off. Naturally, the one or two we have selected are some of our better ones.

Senator McClure. Yes. I didn't expect you to bring in the worst ones.

Dr. Enzer. I will ask Mr. Kenahan just to talk about one or two of them.

Senator McClure. Please do.

Mr. Kenahan. I will speak briefly to two of our recent accomplishments. We have some examples of these with us, so I will ask Mr. Kirby to bring up the first one.

The first is the retractable core bit system. Since you are familiar with mining, you will understand that it is simply a retractable core bit which permits replacement of worn out bits without pulling out the drill rods. As you are familiar with such things, you are aware that it will save a lot of time, and could even aid in preventing accidents.

The system requires only a fraction of the time needed for conventional bit replacement, and of course it significantly cuts the time for drilling.

Senator McClure. What is the time? Just as an example, could you give me a comparison?

Mr. Kenahan. It could cut the time from 12 hours to maybe 1½ hours for a 1,000-foot borehole.

Also, we have what we refer to as a "cement-grouted roof bolt system." The Bureau has developed this system, which uses a low cost gypsum cement for grouting roof bolts in underground mines. Full column grouted bolts usually yield superior protection from roof falls. By the way, roof falls are one of the chief causes of fatalities in mines.

But frequently, full column grouted bolts are used only where mechanical bolts fail, because of the high cost of the resin. The Bureau's system for inorganic grouted bolts has two options: In the first, a cartridge filled with a gypsum-water capsule replaces the two-part epoxy resin system now used. In the second option, the grout injection system is placed on a standard roof bolter.

I have an example and some pictures of this, which I would like to show you.

Senator McClure. Please proceed.

Mr. Kenahan. If I may, I might just add one more.

As you probably know, also, we don't have a great deal of longwall mining in this country, but it is increasing. One of the biggest problems in this type of mining is dust control, and about 50 percent of these longwall operations at the moment are not in compliance because of the respirable dust problem.

The Bureau of Mines has developed a very simple water spray system, which will decrease dust in longwall operations to a point where they are almost in compliance.

SHIFT IN RESEARCH PRIORITIES

Senator McClure. Thank you very much.

Dr. Enzer, the Bureau's program can be largely categorized into five major components, three research components, one each for mining technology, health and safety improvements, and environmental impacts, and two data informational activities, one to support the national minerals policymaking function and another to assess minerals information on Federal lands.

Your 1982 request provides for sizable shifts between research priorities. For example, health and safety is down more than $5 million, and environmental research is down almost $11 million, while mineral resources technology is up over $8 million.

What is the explanation for these shifts?

Dr. Enzer. The explanation for the shifts and the different emphases, Mr. Chairman, are two:

One is the streamlined and reduced budget of this administration, reduced below the original Carter administration budget.

The second one is that this administration wants to undertake a major effort, as I mentioned in my summary, in the area of critical and strategic minerals. That does not mean that we wish to slight either health and safety or environmental problems.

But we believe that, if we are to become less dependent on foreign sources, we must start sometime. And this is as good a time as any to reduce our dependence in this area. What we have done is some programs in the areas that I mentioned, particularly in the area of environmental technology—but we do believe that the cancellations are lower priority projects.

We have delayed some projects that we otherwise would have undertaken in 1982. What I am saying is that they will simply be pushed into 1983 and 1984.

In short, Mr. Chairman, what you have here in this budget indicates the emphases of this administration and of our Secretary.

Senator McClure. They are policy shifts?

Dr. Enzer. They are policy shifts; yes, sir.

Senator McClure. How much research funding will be available for reallocation in 1982 in the health and safety program area as a result of the turnover of research projects?

Dr. Enzer. About 19 percent of them, Mr. Chairman, in the health and safety area.

REDUCTION IN HEALTH AND SAFETY RESEARCH

Senator McClure. Your 1982 budget proposal for this activity is $54.7 million, down $5 million, or 8 percent, from 1981 appropriations to date. About $4 million of this reduction is in safety hazard reduction research, and the other $1 million reduction is in health engineering technology research.

How was this distribution of the reduction determined?

Mr. Kenahan. Mr. Chairman, in the past 5 or 6 years, the distribution of funding in the health and safety program has been—out of the $60 million authorized, about $48 million for coal work and $12 million for metal and nonmetal mines. But this does not represent the entire picture, since we have determined that at least 50 percent of the work that we do in coal-related work is transferrable to metal and nonmetal mines, and vice versa. This was part of the rationale for cutting across the board in the safety and health programs.

The larger amount of money was taken out of the coal program, $4 million, and $1 million from metal and nonmetal projects.

Dr. Enzer. If I might add, Mr. Chairman, we also made a very strong effort to not reduce our funding and not reduce the impact in those areas that are of greatest importance, such as respirable dust.

Senator McClure. Well, it has more to do with the mining methodology or the mineral—you indicate that $48 million went in coal mining research and $12 million in the other areas. And I had indicated in my question that $4 million was in safety hazard reduction and $1 million in health engineering technology research. Is that simply the distribution of the programs under those titles?

Mr. Kenahan. Yes, sir.

FATALITY AND INJURY STATISTICS IN MINING

Senator McClure. Since the health and safety research areas are proposed for reduction in 1982, we assume that the miner's health and safety are increasing. Is this true?

Mr. Kenahan. I have some figures here for fatalities in calendar years. In 1979 in coal, there were 144 fatalities. In 1980, there were 129, down 15. In metal and nonmetal mines, also, fatalities dropped from 121 in 1979 to 103 in 1980, down 18.

However, the nonfatalities in coal, and these are in fiscal years, in 1979 increased from 21,881 to 22,515, up 634. In metal and nonmetal mines, though, it was reversed, and there was a decrease of about 2,300 from 20,000 in fiscal year 1979.

Since the organization of the Bureau of Mines back in 1910, the fatalities have dropped from several thousand annually to the numbers just cited, which is still, as you know, too high.

And I might add, sir, that just recently we had 15 miners killed out in Colorado. In Harlan, Ky., just yesterday three more miners were killed by carbon dioxide.

Up in the anthracite region of Pennsylvania, just this week also, we had three miners who were injured.

Senator McClure. I will ask some additional questions for submission of the record for some statistical data in that regard.

RESEARCH PRIORITIES

Senator McClure. Are the Bureau's programs targeted to the most hazardous items?

Mr. Kenahan. Yes, sir.

Senator McClure. Who sets the research priorities?

Dr. Enzer. We set research priorities between various agencies. We set them with MSHA in the Labor Department, sir.

Senator McClure. Why do you state in your justification that research priorities are not set yet, but will be decided just prior to the start of the fiscal year. Don't you know now what the problems are?

Dr. Enzer. That is probably an incorrect statement, sir. The correct statement is that we do know what the priorities are, but before we go into the new fiscal year, there is a final review to accommodate any changes.

Senator McClure. But do you have priorities established?

Dr. Enzer. Yes, sir.

Senator McClure. Pretty well in your own mind?

Dr. Enzer. Yes; we do have priorities established.

Senator McClure. Could you provide for the record what those priorities are?

Dr. Enzer. Yes.

[The information follows:]

HEALTH AND SAFETY RESEARCH PRIORITIES

Research priorities for health and safety issues are set well in advance of any new fiscal year based on formal and informal input from the total mining community with particular emphasis placed on long-term health and safety statistical trends made available by MSHA and NIOSH. Specific projects designed to address these major research problems are selected and prioritized jointly under a formal ranking methodology agreed upon by the MSHA and the Bureau of Mines. This methodology establishes a priority list of projects. It is this final list of projects that can be adjusted just prior to the start of any fiscal year. This is a flexible system within which to work toward our major research priorities, as it accommodates for any changes that may occur in the year because of, for example, a change in funding level or a mine disaster that requires immediate attention due to the obvious danger of the situation. The research priorities, as stated in the budget justification, therefore, are accurate for fiscal year 1982.

Health engineering technology research priorities.—To find solutions to health-related engineering problems involved in mining and processing operations. To improve dust control technology and thus decrease the hazard of respiratory diseases including coal workers pneumoconiosis. The develop means by which the noise exposure of workers in underground and surface mining operations may be reduced to permissible levels. To determine the origin and composition of toxic gases that may become present during mining operations, develop monitors for detecting and warning of dangerous toxic gas levels, and develop methods for reducing or eliminating the toxic gas products from such sources as accident combustion and mine blasting. To develop the information, instrumentation and methods for control needed to protect personnel from radon gas and its airborne radioactive daughters in the working places of underground mines. To develop ventilation systems that provide proper control of the quantity, quality, temperature, and humidity of the mine air in order to provide and maintain safe and healthful working places underground. To keep abreast of changing technology and mining conditions and to anticipate the need to protect the health of an increasing workforce.

Safety hazard reduction research priorities.—To develop technology which enables the design of mining and milling equipment and systems to minimize hazards. To develop effective training programs which can minimize accidents to inexperienced miners and to experienced miners undertaking new tasks. To improve electrical systems in mines in the areas of fault protection, trailing cables, cable handling, and cable damage protection. To provide equipment operator protection from rockfalls in mines with law seam heights. To develop rollover protective criteria for certain large size mining equipment. To reduce glare in underground lighting. To develop quantitative wire rope retirement criteria for safe and efficient hoisting of men and materials. To develop technology for determining premining hazardous geological structures. To develop criteria for selection of safe mining systems and design of mine openings. To develop reliable systems for early warning of impending ground failure. To develop improved techniques to stabilize waste at disposal sites. To develop technology for maximizing the miner's chance to survive a disaster. To update and develop new life support systems and emergency communication systems. To diminish miner vulnerability to accidental fire and explosions. To prevent flammable methane-air mixtures in underground mines through improved ventilation techniques and seam degasification techniques. To assess problems associated with safe and effective use of explosives and to perform basic studies of explosives behavior of newly developed commercial explosives that could be used in mineral extraction. To develop methodology that will evaluate the impact of research subprograms and research projects on the mining community. To continue the operation and maintenance of research and test facilities used to test and demonstrate new procedures and equipment.

INCIDENCE OF BLACK LUNG DISEASE

Senator McCLURE. Your statement indicates that health engineering technology research in respirable dust problems is estimated to continue in 1982 at about the same level as 1981. Part of that effort is for intensive interaction with European research establishments. What is the

European experience with the incidence of black lung and similar illnesses?

Dr. ENZER. I shall ask Mr. Marovelli, who is very knowledgeable in this area, Mr. Chairman, to answer that question.

Mr. MAROVELLI. Mr. Chairman, looking at the long-term trend in the United States, the prevalence of black lung, or pneumoconiosis, in the United States was about 15 percent, based upon studies by NIOSH in the early 1970's. The prevalence among active miners is now about 6 percent.

We believe it is about 6 percent now in Great Britain. I don't recall what the prevalence was there in 1970, but right now it is about the same as ours, in the 6-percent range. In Germany the prevalence rate is somewhat higher than either in England or here.

Now, you have to bear in mind that we are somewhat comparing apples and oranges here. The West Germans and the British mine almost 100 percent by longwall methods, at greater depths, and a different type of coal. And we mine essentially 95 percent room and pillar. We have something like 100 longwall faces in this country.

So, what I'm saying, sir, is that there has been a considerable amount of improvement in the U.S. room and pillar mines, and that incidence rate that I quoted reflects pretty much room and pillar mining.

However, as was said earlier by Mr. Kenahan, we do have a problem with our longwall faces.

RESEARCH INTERACTION WITH EUROPEAN ESTABLISHMENTS

Senator MCCLURE. How much of the expense of this research program is in what you call intensive interaction with European establishments?

Mr. MAROVELLI. Well we don't have a specific budget, per se, for that. We do have agreements formally with the National Coal Board in England.

Senator MCCLURE. I guess what I'm really getting at is is that just words, or is it real? Do you have intensive interaction?

Mr. MAROVELLI. Yes, we do.

Senator MCCLURE. How much are we spending for it, and what are we getting out of what we're spending?

Mr. MAROVELLI. We are intensive in our actions. For example, with the National Coal Board, it is a formalized agreement, and we have correspondents for specific technical areas. The U.S. correspondent is Dr. John Breslin, who is on my staff. He has been over there, at our expense, to visit them on several occasions. They have been over here, at their expense.

Senator MCCLURE. What do we get out of that expense of sending them over there?

Mr. MAROVELLI. Well, the figure I cited on pneumoconiosis is one of the bits of data we got out of that.

Senator MCCLURE. We could have gotten that by mail.

Mr. MAROVELLI. Yes. But recently there was a U.S. industries study group to go over there and take a hard look at just where they were.

And Dr. Breslin was part of that group. The Bituminous Coal Research, Inc. was part of the group. And we have exchanged instrumentation. We have evaluated scrubbers over there, and they send equipment over here.

We are doing the same thing with Germany. We exchange personnel and equipment.

Senator McClure. Is that primarily with Great Britain and West Germany?

Mr. Marovelli. Yes, sir.

We also have agreements in the health area, we also have agreements, for example, with Poland, primarily in the safety area.

Senator McClure. But that is not the health area?

Mr. Marovelli. Not with Poland. It is primarily England and Germany, in the dust area.

Senator McClure. How much are we spending on that interaction?

Mr. Marovelli. I would imagine something in the nature of $15,000 or $20,000, primarily travel expense and the shipping of equipment.

Senator McClure. Out of how much total expenditure? What percentage would that be?

Mr. Marovelli. Well, that is out of our total health and safety budget of $60 million. It is very small. Foreign travel is very, very constrained in the Department of Interior, especially right now.

Senator McClure. Well, I guess that helps answer my question of whether the words "intensive interaction" are more than words. It sounds it was intended to convey something more important than has actually happened, or at least in the levels of activity and expenditure.

Mr. Marovelli. Well, sir, I'm referring only to the travel. We do correspond, we do ship our reports, and we are on the phone.

Senator McClure. And that is included in the $15,000 to $20,000?

Mr. Marovelli. No; I was primarily putting the figure on what the travel might be.

Senator McClure. What is the total cost?

Mr. Marovelli. I would think we would have to give that for the record.

Senator McClure. Would you, please?

Mr. Marovelli. Yes, sir.

[The information follows:]

INTERACTION WITH EUROPEAN RESEARCH ESTABLISHMENTS

Direct travel cost for interaction with European research establishments involving the respirable dust program in fiscal year 1981 was approximately $8,000. Relative to exchange of information, receiving European visitors and shipment of instruments, it is estimated that an additional $3,000 was expended.

HEALTH-RELATED RESEARCH

Senator McClure. All of the other health-related research initiatives are targeted for reductions in 1982, including radiation hazard research, industrial hygiene research, noise control research, and ventilation research. However, you're justifications for those reductions are not very detailed.

The language reads—and I quote: "The effect of this $5.2 million reduction will be to reduce in scope or defer projects."

Why are these projects being reduced?

Mr. MAROVELLI. Why are they, sir?

Senator MCCLURE. Yes.

Mr. MAROVELLI. Well, it is a matter of funding, there is only so much money to go around, and one of the ways is to cut down the scope of work. I think that is what that reference is.

Senator MCCLURE. And that reference then is simply an economic choice. You had dollars available, and you decided where the dollars should be spent?

Mr. MAROVELLI. Yes, sir.

Senator MCCLURE. Could you identify for us the reasons why you decided radiation hazard research, industrial hygiene research, noise control research, and ventilation research were less important health and safety considerations than the others?

Mr. MAROVELLI. Well, first of all, we are pretty much directed by the mandate to approach health and safety as sort of a shotgun approach, everything is specified, you must look at all of these technical areas.

We can't put all of our resources in just one area for 3 years, so therefore we are sort of locked into this approach on all of the problems.

And rather than to select out radiation completely and say we're going to throw it out for a few years, we keep it going along. And therefore, we cut across the board. We actually did cut in the safety sector, also. The total cuts were not strictly in the health area, sir.

Senator MCCLURE. Well, but respirable dust problems remains at a given level and these others were reduced. Is that an evaluation that the respirable dust problems are more important health and safety problems than are these others?

Mr. MAROVELLI. In that particular case, because the fact that we want to produce coal and the longwall operations are in jeopardy, that one factor has been identified to us by the industry as the most critical problem in longwall mining.

Senator MCCLURE. We want to go to produce more coal, and the industry wants to go to longwall. And why did they want to go to longwall?

Mr. MAROVELLI. Well, that is partially economics. They can mine at a higher rate.

Senator MCCLURE. And so the research program in health and safety is to accommodate the economic demands of the mining industry?

Mr. MAROVELLI. Well, in part, we have taken a position that you cannot separate out environment, productivity, and health and safety. There they are really one and the same thing.

One way to improve health and safety is to improve productivity. You put less men up on the face, and you're getting someplace. So, we don't really struggle with that.

Senator MCCLURE. And that will be the case with the institution of longwall mining?

Mr. MAROVELLI. We believe that is a step in that direction; yes, sir.

Senator MCCLURE. Of exposing fewer men to the risk?

Mr. MAROVELLI. Yes, sir.

ESTABLISHMENT OF RESEARCH PRIORITIES

Senator MCCLURE. I am a little puzzled, and I don't want to appear argumentative, but these other areas have been identified and were specifically identified, because they were felt by a good many people in the Congress and outside to be major health and safety hazards, and therefore ought to be addressed.

Now, I look at the budget, and you've said: "Well, we're going to do this one, but the rest will not be done so much. We will keep this one."

And I get from you, in response, that that assessment was really not so much yours alone as it was the coal mining industry that wants to shift their mining method.

Mr. MAROVELLI. No, sir. Those cuts were done strictly internally in a limited period of time—back in February, when the original cuts were made there was not time to consult industry on those.

Senator MCCLURE. Well, you said a moment ago it was primarily because of the health and respirable dust problems which were associated with longwall mining, and longwall was the desire, an identified desire of the industry.

Mr. MAROVELLI. Yes; that goes back to a statement that Dr. Enzer says, that we have priorities. And that is a priority item.

Senator MCCLURE. Well, that is what I'm trying to get at, is how was that priority established? I keep running around this, but I haven't seen anything new.

Mr. MAROVELLI. OK. Let me explain how the priorities are set.

First of all, we gather information from the total mining community. So, if I talk much about MSHA, it is only because they do play a very strong role. We don't just carry out the policies of MSHA in any event. Our people, who are in the mines and in the laboratories over the years, have an awareness of what the problems are.

Furthermore, MSHA inspectors are in the mines. We constantly input into our system research ideas that we perceive as meeting needs out there. The MSHA people also do it.

We have a standard research input format which allows us to enter such things as: Will this effect the standard? Will it facilitate a compliance by our industry? What will the cost be? How long will it take? What is the probability of success?

All of these projects can then be given a rating by the criteria that are on this form. Periodically during the year we get together, and the projects are pooled. Those that duplicate each other are combined, and so forth.

And then, in the respective areas, respirable dust, for example, we go through a ranking, and we will rank these projects not knowing what the total allocation will be later on in time. We will rank them 1 through 50, say.

Then, later on, when we have to enter our allocation of $4 million, we draw the line; and those above will get funded, with the exception that our managers have a responsibility to insure that the program is balanced, that we don't have simply all short-term, quick-fix projects; that if there is some project that in order to get an optimal solution, you are going to have to do long-term research, it might run 3, 4, 5 years, then the managers have the responsiblity to reach down and bring one of those projects above the cutoff line, deferring the lower ones.

Now, as a companion activity with that, we have the responsibility to make sure that the MSHA people know where we are during the year, in terms of research accomplishments and so forth, so we have research review committees, as do they. And periodically we get together, so that when we do the project ranking, we have our best experts at the table, who are knowledgeable in those particular areas that they are working in.

Senator McClure. Well, in making the ranking, what factors do you consider? Do you consider the severity of the health hazard, the injury? Do you consider the numbers of miners exposed to it? Do you consider the costs?

Mr. Marovelli. The impact comes into the picture. The probability of successfully transferring the technology is a consideration. The number of criteria change over the years.

I think there are some 12 criteria now. We have had 15.

Senator McClure. I will ask in one of the questions that I will submit for responses in writing a more detailed explanation of how you arrive at that, because I think it is important for us to know, to be able to evaluate, and also to answer questions when we are asked by others as to how you do it.

INPUT FROM MEDICAL COMMUNITY

Do you get input from the medical community as to the types of injuries and the types of illnesses that are involved?

Mr. Marovelli. We draw the line there. NIOSH has a responsibility for the medical aspects; however, we work formally with them through a memorandum of understanding. And Dr. Breslin who I mentioned before on my staff attends their advisory committee meetings.

Senator McClure. So you're talking about health studies—NIOSH carries out that part of it?

Mr. Marovelli. Yes.

Senator McClure. And they have the interaction with the medical community?

Mr. Marovelli. Primarily.

Senator McClure. Is that role going to be continued, or is NIOSH being eliminated?

Mr. Marovelli. I can't respond to that.

Mr. Kenahan. Not that we know of, Mr. Chairman.

Senator McClure. If it were, you would pick up that responsibility, or you would find somebody else to do it. Or would you just assume that the medical community interaction would no longer be necessary or simply no longer available?

Mr. MAROVELLI. Well I certainly think that that is an area that has to continue because we need the data base that come from those medical studies to guide us.

Senator MCCLURE. How about interaction or consultation with the insurance companies?

Mr. MAROVELLI. We haven't done that too much in the medical area. We would get any input from NIOSH.

Senator MCCLURE. Don't they have a great deal of data?

Mr. MAROVELLI. NIOSH?

Senator MCCLURE. No, the insurance companies.

Mr. MAROVELLI. Yes, sir.

Senator MCCLURE. Wouldn't that be a valuable source of information as to what the exposure, the risk, the cost, the impact is?

Mr. MAROVELLI. Well, I'm speaking for NIOSH now, but I do believe they assess that data.

Senator MCCLURE. You think NIOSH does?

Mr. MAROVELLI. I think so.

Senator MCCLURE. That is not required in your memorandum of understanding with NIOSH.

Mr. MAROVELLI. No, we don't spell that out specifically.

Senator MCCLURE. You do with the medical community, however.

Mr. MAROVELLI. Pardon me?

Senator MCCLURE. You do spell that out with the medical community input?

Mr. MAROVELLI. No, we don't.

Senator MCCLURE. Isn't that something that ought to be addressed?

Mr. MAROVELLI. Well, for instance, when I cited the pneumoconiosis data, that comes to us from NIOSH, and they, in turn, have made the surveys and looked at other people's data. I'm just saying that anything we get in the medical area, we would get through the NIOSH people.

Dr. ENZER. We have implicitly assumed, Mr. Chairman, that NIOSH does all of the analysis and does get all of the information that is necessary before they come to us and tell us what the nature of the research problems are that they would like us to investigate.

INPUT FROM OTHER ORGANIZATIONS

Senator MCCLURE. Would the same thing be true with respect to input from labor organizations?

Dr. ENZER. Yes, sir.

Senator MCCLURE. Is that also true——

Dr. ENZER. But not to the same extent as in the medical area because we have considerable familiarity with labor problems.

Senator MCCLURE. Do you have formal links of information?

Dr. ENZER. No; we don't.

Senator MCCLURE. But you do have informal links?

Dr. ENZER. Yes.

Senator McClure. With the labor organizations?

Dr. Enzer. Yes.

Senator McClure. Do you have the same degree of links with industry?

Dr. Enzer. Yes, we do.

Senator McClure. Greater or lesser?

Dr. Enzer. Greater.

Senator McClure. Greater input from industry?

Dr. Enzer. Yes, sir. Again, because in the case of labor, there are other government organizations, particularly the Labor Department where there is a closer and more direct interaction. And since we do work with these other organizations, we do get the information that they get from labor in assimilated form.

Senator McClure. You do have links with the Department of Labor in this area?

Dr. Enzer. Yes, sir.

Senator McClure. Other than NIOSH?

Mr. Kenahan. MSHA is in the Labor Department. And Mr. Marovelli can bear this out, that MSHA does get some of the information you talked about from NIOSH, and of course we interact very actively with MSHA.

Senator McClure. Do you have links with the Department of Commerce?

Dr. Enzer. Mr. Chairman, one of the things that we can do—and that is best provided for the record—is to give you a list, and it is a rather lengthy one, of all the organizations that we do interact and have memoranda of understanding with. And perhaps we might supplement that with some text and provide some substance to show you how we operate and how we interact.

Senator McClure. Would you do that? I would like more than just a bare list, because I suspect the list would include everything that the mind of man or woman could come up with. And that wouldn't tell me much unless there was some way to evaluate how real and how full that link was.

Dr. Enzer. We will try to send you a sensible list from which you can get some feeling for what we do.

[The information follows:]

Interaction With Outside Groups

The Bureau has several formal mechanisms to promote interaction with other Federal agencies and also with private industries, States, and academia.

A. The Bureau has four Memorandums of Understanding with other Federal agencies:

1. Memorandum of Understanding Between the Bureau of Mines and the Mine Safety and Health Administration.

Purpose: To insure full and effective use of the capabilities and resources of the Bureau in managing and conducting research, and of the capabilities and resources of MSHA to assist in planning research and to assure maximum utilization of technologic development resulting from mine health and safety research.

2. Memorandum of Understanding Between the Bureau of Mines, Department of the Interior and the National Institute for Occupational Safety and Health, Department of Health and Human Services.

C.

Purpose: For cooperation between the Bureau and NIOSH within the guidance and congressional mandate of the Federal Mine Safety and Health Amendments Act of 1977: to improve the Federal research effort for the protection of the safety and health of the Nation's miners while avoiding unnecessary duplication of effort.

3. Memorandum of Understanding Between the Department of the Interior and the Department of Energy on Solid Fuel Minerals Mining Research.

Purpose: To conduct cooperative research when it is of mutual interest to the two agencies; to eliminate undesirable overlapping research; to work in harmony to address environmental, health, and safety issues associated with coal mining research projects.

4. Memorandum of Understanding Between the Bureau of Mines and the Office of Surface Mining.

Purpose: To insure full and effective use of the capabilities and resources of the Bureau in managing and conducting mineral environmental research to assist and support OSM in the enforcement of Public Law 95-87.

B. An Interagency Agreement addresses a specific issue of mutual concern to the Bureau and another Federal agency. An example is an agreement with the Department of Energy to purchase and test a miniminer system (4M Miner).

C. The Bureau currently has 182 active Memoranda of Agreement with private industries, universities, and States. The purpose of this document is to invest cooperative efforts into a single project. The Bureau usually initiates these agreements.

D. The Bureau also has cost-sharing contracts through which private organizations will invest direct resources or indirect resources (for example, a mine test site for Bureau technology).

E. In support of the entire research program, the Bureau has an active program of technology transfer designed to introduce new developments to industry. Information dissemination of the results of Bureau-sponsored research is effected through special publications, seminars, program briefings, and exhibits in cooperation with the Office of Public Information.

FATALITY RATE IN MINING INDUSTRY

Senator McCLURE. The mining industry still has the highest fatality rate per number of workers employed of any industry in the country. Mining has 1 percent of the work force but accounts for 8 percent of all industrial fatalities. Agriculture has 2 percent of the fatalities. Construction has 4 percent, and manufacturing has about 1 percent.

Over the long term, the fuel minerals industry, particularly coal, will be pressured into increased outputs as the world price for petroleum products continues to climb.

Isn't miner safety a major social, political, and economic impediment to that increased output?

Dr. ENZER. It is a major reason, Mr. Chairman, for the sums of money that are being spent by the Federal Government in this area.

Senator McCLURE. Well, I look at a nuclear powerplant, as an example, and in the history of the nuclear industry, there is not a single fatality or illness attributed to the radiation hazards at a nuclear powerplant. And yet we know if we open a 1,000 megawatt coal-fired plant based upon underground mined coal, there will be 10 miners die each year from the operation of that plant.

Now policymakers looking at choices will certainly consider the fact that if they operate a nuclear plant, over the life of that plant there will be zero illness or zero fatality attributed to the radiation plant. But over the 30-year life of a similar 1,000 megawatt coal-fired plant, there will be 300 miners die.

Dr. ENZER. You know as well as I do, Mr. Chairman, that these statistics have been cited before, and you are absolutely right that these are the relevant numbers for these two industries. And you know as well as we do that when it comes to a comparison between nuclear energy and mining, that the decisions that are made are based on things that transcend fact—on a priori fears that up till now have not been realized, although there is a major problem of nuclear waste disposal.

You are absolutely right. We have made this point in the past, and it will be made in the future. And the only thing, perhaps, that I might add to that, is that we have an enormous resource in coal, and we are committed to its utilization.

Senator McCLURE. And we have an ingrained acceptance of the fatalities in the industry. And so, since it is sold and since it is getting better, we accept what would be unacceptable somewhere else.

Dr. ENZER. We in the Bureau don't accept that, Mr. Chairman.

Senator McCLURE. I don't mean you or me; I mean "we" as a society. Isn't that really the root of the problem? How would a high technology industry such as NASA—or let's take the atomic industry again, because the hazards are high and the risks are great and the technology is high—we have reduced exposure to the level where we can say that in the history of the industry, there have been no illnesses or fatalities due to that hazard.

Dr. ENZER. You're right, Mr. Chairman.

Senator McCLURE. And here we are expanding greatly; we are going to, in the balance of the century, quadruple the consumption of coal in this country. Much of that will come from surface mines where the fatality and accident ratios are more akin to other industries, rather than the underground mining in which we see high incidents of fatality. But we are at the same time then saying that we are going to expose many more miners to the hazards that are all too familiar, and you recite what happened yesterday and last week. They happen so often we are used to them.

We have 50,000 injuries or fatalities on the Nation's roads each year, and we are so used to it, we don't say anything about it anymore. We adopt a traffic safety program, and we start spending a little bit more money to reduce some of those hazards, but we accept 50,000 people a year. We remember the tremendous carnage that occurred in the Battle of Gettysburg, and yet we permit that to occur on an annual basis simply because we are used to it.

It seems to me that a high technology industry, a new industry developing in the area of coal mining, would approach the problems much differently. Certainly when we used to be able to mine coal and market it for four or five dollars a ton, where the cost of mining has increased dramatically but not nearly as dramatically as the market value of that energy source, there is an economic opportunity to make much more dramatic gains in terms of miner health and safety. They are not limited by the economics in the same way they were earlier.

Dr. ENZER. I don't think we can add much to what you just said, Mr. Chairman.

Senator McCLURE. Well at least you didn't subtract from it. [Laughter.]

Dr. ENZER. We wouldn't dare. [Laughter.]

FUNDING FOR GROUND CONTROL RESEARCH

Senator McCLURE. The greatest number of fatalities in mining still result from underground accidents involving "ground control" problems such as the collapse or fall of the wall or the roof of an underground mine.

In 1979, 79 fatalities were recorded as a result of ground control failures. However, ground control research funding will go down about 10 percent in 1982. Why?

Mr. MAROVELLI. Well again, there is only so much money available. Let me just say in general that we put about a quarter of our resources into the health area. We put a little bit more than half of our resources into a control of ground and to industrial hazards because that is where these people are getting killed on a daily basis. We put the other quarter of our resources into the prevention of catastrophic disasters. And there is no formula for that allocation.

Senator McCLURE. It's simply a matter of judgment?

Mr. MAROVELLI. When you have to cut that much, you have to go to where the bulk of your money is.

FUNDING FOR HEALTH AND SAFETY RESEARCH

Senator McCLURE. How much money are we putting into health and safety research total?

Mr. MAROVELLI. The total is $60 million.

Senator McCLURE. That's the Federal expenditure. Is there a significant private or non-Federal expenditure?

Mr. MAROVELLI. There is a non-Federal expenditure that we feel is considerably less than the Federal.

Senator McCLURE. How much is set aside in the mine area reclamation fund?

Mr. KENAHAN. This comes under the purview of the Office of Surface Mining. That fund I understand is about $400 million.

Senator McCLURE. $400 million to restore the surface and $60 million to try to preserve lives?

Mr. KENAHAN. That's right, sir.

UNDERGROUND VERSUS SURFACE STATISTICS

Senator McCLURE. I don't see much information in your budget justifications for the type of mining operation found in the West, particularly the large open-seam coal operation. What are the comparative injury and fatality rates for underground versus surface mining?

Mr. MAROVELLI. We don't have those numbers, but it is more severe.

Senator McCLURE. Could you please provide for the record those figures and the key risks and related research needs for the open pit mining operation?

Dr. ENZER. Yes, sir.

[The information follows:]

FUNDS DISTRIBUTION, UNDERGROUND AND SURFACE MINING, FISCAL YEAR 1982

MINERALS HEALTH AND SAFETY TECHNOLOGY

The proposed budget distribution for fiscal year 1982 is 66.5 percent directly to underground mining, 7 percent directly to surface mining, and 26.5 percent applicable to both surface and underground mining. This disuribution reflects the difference between the underground and surface accident statistics as well as the concern for the higher health risks associated with underground mining, that is, exposure to respirable dust, radiation, diesel emissions, et cetera.

	Underground mining	Surface mining	Both	Total
Health	$6,895,000	$711,000	$4,347,000	$11,953,000
Safety	29,460,000	3,111,000	10,176,000	42,747,000
Total	36,355,000	3,822,000	14,523,000	54,700,000

MINERALS ENVIRONMENTAL TECHNOLOGY

The proposed budget distribution for fiscal year 1982 is 34 percent to underground mining and 56 percent to surface mining. The remaining 10 percent ($1.259 million) is for mineral processing operations such as smelting.

	Underground mining	Surface mining	Total
Mine waste control	$2,447,000	$2,157,000	$4,604,000
Process waste control	0	0	0
Mined land reclamation	1,678,000	3,699,000	5,377,000
Special environmental problems	54,000	1,021,000	1,075,000
Total	4,179,000	6,877,000	11,056,000

The principal environmental problems in underground mining are subsidence, which manifests itself on the surface, solid waste disposal, acid mine drainage control, and effects of mining on ground and surface water. Subsidence is addressed under Mined Land Reclamation and the others under Mine Waste Control. Similar problems in mine waste control are addressed for surface mining. However the bulk of the Mined Land Reclamation effort is for reclamation, revegetation, land use, and other land restoration activities. This work is coordinated closely with OSM. Special environemtnal problems include damage from blasting operations and probelms of dust and noise from surface mining operations.

MINERAL RESOURCES TECHNOLOGY

Mining research in the mineral resources technology program is directed at increasing efficiency and productivity in nonfuel underground and surface mines through technological improvements, with emphasis being placed on increased mechanization as a method of effecting greater flexibility of the mining operation. Productivity improvements are primarily related to extraction and loading of ores at the face or bench, and transportation and haulage of personnel, supplies, and materials.

Advancing mineral science and technology

Underground mining	2,000
Surface mining	1,000
Total	3,000

The research on underground mine productivity is directed toward vein-type deposits of the Coeur d'Alene Mining District and bedded-type deposits of the midwest. The research on surface mine productivity is directed toward copper resources of the Southwest, iron ore resources of the North Central States, and complex metal ores in the Central Rocky Mountain Region. Coal mine productivity research is administered by the Department of Energy, Office of Coal Mining.

Underground mining research represents 4.9 percent of the total in mineral resources technology, while surface mining research accounts for another 2.5 percent. The remaining 92.6 percent of the program ($40,925,000) is for mineral processing research.

IMPACT OF POTENTIAL PERSONNEL REDUCTION

Senator McCLURE. Although the minerals health and safety technology research program is proposed for a $5.2 million cut, there is no reduction in FTP, as shown on page 11 of the justification. Why not?

Mr. MAROVELLI. Are you talking of personnel, sir—full-time permanent personnel?

Senator McCLURE. Yes.

Mr. MAROVELLI. Well that program has been historically done in part under contract and in part in-house in our laboratories. To start out, roughly 70 percent contract. It is now about 50 percent contract, so that we are able to sustain the work force. If it was strictly in-house, then we would have to show a reduction of personnel.

Senator McCLURE. What would be the impact if there were a 10-percent cut in personnel as well as in funding?

Mr. KENAHAN. That would present us a very serious problem, sir.

Senator McCLURE. In what way? Telling 45 people why?

Mr. KENAHAN. No, sir. The biggest impact would be on the research program itself. Our personnel has been getting cut over the years, as you may be aware.

Senator McCLURE. Is that why you've moved to contract services?

Mr. KENAHAN. No, sir.

Mr. MAROVELLI. When the Coal Mine Health and Safety Act was passed in 1969, the Bureau of Mines did not have any contract effort to speak of, just for routine equipment purchasing. In the deliberations with the Congress, the position was taken that that program would be essentially a contractual one to avoid having to hire a lot of people.

Senator McCLURE. It's a darn good thing we did, too, isn't it, or now we would be cutting back and keeping the same number of personnel and only cutting programs?

Mr. KENAHAN. No comment, sir.

Senator McCLURE. I notice that in the environment, you have a reduction of 213 people—environmental programs.

Mr. KENAHAN. That, sir, has to do with the reprograming of the $8.6 million from the environmental technology program to the mineral resources technology program. These people, the ones we are talking about here, sir, are located in our 10 research centers, and they of course will not be fired or RIFed. They will simply be doing a different kind of work. Some of them will be shifted over into the mineral resources technology program.

Senator McCLURE. Well, where you will increase personnel?

Mr. KENAHAN. We won't, sir, we will still have the same number of personnel.

Senator McCLURE. You will increase it in that other program?

Mr. KENAHAN. In the mineral resources technology program, yes, sir.

MINED LAND RECLAMATION RESEARCH

Senator McCLURE. The budget request for research on the environmental impacts of mining and processing activities is $12.4 million in 1982, down 46 percent from the 1981 level of $23 million. Personnel requested in 1982 is also down sharply—49 percent, a reduction of 213. Only mined land reclamation research remains at about the same level as 1981 at about $5.4 million.

Mined land reclamation, however, is an active and ongoing problem at the Federal and State level. The Forest Service had a significant research project, the SEAM project in the late 1970's. The Soil Conservation Service and the Office of Surface Mining both have reclamation projects underway.

With all of this background, why do we continue to do mined land reclamation research?

Dr. ENZER. I will try to give you an answer, and I will ask Mr. Forshey to supplement that answer, Mr. Chairman.

Our answer is that we do need to maintain expertise in this particular area, and we are involved in an active effort of technology transfer from the Federal Government to States and industry. The sort of activities that we are involved in here are largely demonstration efforts where we demonstrate new technologies in various areas. We then expect that States take over and do most of the actual land reclamation efforts in their respective areas.

I will ask Mr. Forshey to amplify that answer.

Mr. FORSHEY. Yes, Mr. Chairman. As I'm certain you are quite well aware, the work that the Office of Surface Mining is doing under their program is specifically directed to resolving environmental problems associated with past coal mining and processing activities. It is not directed to any problems created by active mining today.

The Forest Service research is closely coordinated with the Bureau of Mines. Their reclamation research amounts to approximately one-fourth the amount of work we have ongoing. We have a memo of understanding with the Forest Service, and we meet regularly with them to coordinate the respective work done by them and done by us so there is no duplication, and there is integrated support.

We also work closely with the Office of Surface Mining in their abandoned mined land program. At the direction of Congress, they passed through to us $16 million in the present fiscal year. We provide technical expertise in the development and implemenation of reclamation projects for the Office of Surface Mining for resolving critical abandoned mined land problems in the several coal producing States.

Senator McCLURE. How much has been expended to date on mined land reclamation research by the various State and Federal agencies?

Mr. FORSHEY. Sir, I don't have that number immediately here, but it can be provided for the record.

[The information follows:]

Mined Land Reclamation Research Expenditures

While the Bureau of Mines does not maintain exhaustive records on the research expenditures of various State and Federal agencies, we are generally familiar with the order of magnitude of these expenditures, particularly those of Federal agencies.

An analysis of Federal funding of coal activities conducted about 2 years ago indicated that funding for mined land reclamation research activities in fiscal year 1979 and fiscal year 1980 was about $10 and $12 million, respectively. Agencies included in the analysis were the Bureau of Mines, OSM, USDA, EPA, and DOE. Assuming that level of funding for the decade of the 1970's and prior efforts by Federal and State governments, total mined land reclamation research funding to date could be conservatively estimated at about $150 million, principally in coal mine reclamation.

The Bureau's own analysis of fiscal year 1981 funding for Federal reclamation research programs indicates that the current number is just over $11 million.

RECLAIMING MINED AND ABANDONED AREAS

Senator McClure. How much has been spent actually reclaiming current mined areas or abandoned areas.

Mr. Forshey. In the Bureau of Mines' budget, sir? We are not presently reclaiming active mining sites.

Senator McClure. Could you provide for the record not only how much the Bureau of Mines has spent but how much the other Federal agencies have spent in actually reclaiming lands?

Mr. Forshey. Yes, to the best of our ability, we will.

[The information follows:]

Mined Land Reclamation Expenditures

From 1949 until the present, fiscal year 1981, the Bureau has been involved in the conduct of over 100 projects dealing with the reclamation and restoration of abandoned mined land areas such as surface reclamation, mine subsidence rehabilitation, mine fire control, waste bank extinguishment and utilization, and mine water control. Total estimated costs for these projects are in excess of $110 million.

More recently, the Office of Surface Mining (OSM) has provided the Bureau with a total of almost $23 million in pass-through funding to assist OSM in implementing programs and projects directed to mined land reclamation and demonstration to reclaim areas adversely affected by past coal mining and processing operations. These critical areas include abandoned coal mine fires, burning coal refuse banks, surface subsidence, acid mine water, et cetera.

While the Bureau of Mines is not in a position to provide precise data on mined land reclamation expenditures for the entire Federal sector, we are aware through our interaction with other agencies that for many years the USDA, TVA, FWS, (DOI), EPA (and its predecessor FWPCA), USGS, other agencies have been involved in mine land reclamation research and demonstration activities. Some of these efforts go back over 40 years.

A national survey conducted by the Department of the Interior in 1967 indicated that 2 million acres were in need of some form of restoration. In 1979, the Bureau reported that costs averaged $30,000 per acre for subsidence rehabilitation. Costs for other reclamation projects ranged from $1,600 to $13,000 per acre for surface restoration and $3,600 to $17,900 per acre for waste bank fires. Costs for controlling underground mine fires can be greater than $5 million per fire. In 1979 the Bureau estimated that an expenditure of more than $30 billion was necessary for the rehabilitation of all lands affected by past coal mining activities.

Senator McClure. What are the key remaining research needs concerning the mined land reclamation?

Mr. Forshey. Sir, presently we are working on improved equipment, attempting to find ways to more effectively and in a more cost effective manner return land to productive states. We are working on improved reclamation equipment design, such as larger blades, using regular production equipment in different ways so that the reclamation aspects of mining are more easily resolved.

Senator McClure. Aren't the mining companies involved in the reclamation doing a great deal of that themselves?

Mr. Forshey. Yes, sir, they are. To a very large extent, they are concerned with getting the mineral out of the ground and not returning the ground to productive use.

Senator McClure. Well they have been in the past, but that has changed.

Mr. Forshey. It has changed, but the bond required under the new OSM Act in many cases does not come close to the cost.

Senator McClure. Well, in my experience, they are spending quite a lot of money, and they are achieving some pretty good results on mined land reclamation.

Mr. Forshey. Yes, they are. Much of what they are achieving and many of those technologies, though, beginning to emerge have some origin in the Bureau of Mines and Forest Service research.

Senator McClure. But at some point when they get actively involved, your research becomes relatively much less a part of the total expenditure, and there total operating experience becomes a much more important part of total knowledge acquisition, does it not?

Mr. Forshey. Yes, sir, that is correct.

Mr. Kenahan. And, sir, may I add that when these moneys that I talked about previously, the abandoned mined land fund that comes from the royalties, $400 million— when this money is given back to the States, many of the States, will not have the technical capability to conduct some of these projects, and we expect that they most certainly will come to agencies like the Forest Service and the Bureau of Mines for technical assistance. So we have to keep our hand in the research in this area in order to prepare for this eventuality.

Senator McClure. Well, my experience would indicate that the States are very actively involved, and they are about to become extremely more so involved.

Mr. Kenahan. Yes, sir, that is true. But we still have a lot of interaction with the States in abandoned mine land work.

Senator McClure. Are they asking you for advice?

Mr. Kenahan. Yes, sir.

Senator McClure. On technical aspects?

Mr. Kenahan. Yes, sir.

Senator McClure. Would you provide some statistical evidence for the record and maybe on a State-by-State basis, if you could do that, because that would aid us in comparing the progress with the demands being made upon you.

Mr. KENAHAN. We will do so.

[The information follows:]

ADVICE TO STATES ON RECLAMATION

Most requests from the States for information on mined land reclamation are verbal and are directed to Bureau personnel who have a long working experience with State and local governmental personnel involved and concerned about resolving problems associate with past mining and mineral processing activities. Also, many requests on behalf of constituent States and communities are directed to the Bureau by Federal House and Senate staff personnel. Most inquiries relate to coal problems and are mainly from the eastern coal producing States—Pennsylvania, Ohio, Kentucky, and Maryland. Most noncoal inquires come from States such as Missouri, Oklahoma, Colorado, Utah, and Kansas. The Bureau does not maintain a State-by-State list of requests for information and mined land reclamation.

PRICES BELOW WORLD PRICES

Senator MCCLURE. In regard to our gas and oil supply shortage situation, one key aspect that led to the problems that we experience today was the Federal Government's policy to hold domestic prices below world prices, driving consumption up and leading to increased international dependence. Do we have a similiar situation in minerals, that is, are domestic and rural prices below world prices and do the Federal Government's policies support that pricing situation?

Dr. ENZER. To my knowledge, Mr. Chairman, there is no mineral other than the fuel minerals that you mentioned where domestic prices are below world prices. Most of the major minerals are traded internationally, and although, in some areas, thereare such things as producer prices, there are enough suppliers to prevent any price manipulation, except perhaps in certain instances such as cobalt, where we do not have any domestic supply. But of those minerals where we do have domestic production, and significant domestic production, prices are largely determined in the free markets.

MINERAL SURVEYS ON PUBLIC LANDS

Senator MCCLURE. With respect to mineral surveys on public lands, the Bureau provides detailed site-specific mineral surveys. In 1982 this function is proposed at essentially the same level as the 1981 appropriations to date, $12.3 million. According to your justifications, your land assessment program is limited to National Forest System lands, is that accurate?

Dr. ENZER. Let me get a list here, sir.

Senator MCCLURE. I was under the impression that the Bureau is to assist BLM in doing mineral surveys of its wilderness areas. Would that activity show up here, or is that a reimbursable program?

Dr. ENZER. That is a reimbursable program.

Senator MCCLURE. So that would not show up in that particular area?

Dr. ENZER. No.

Senator MCCLURE. What is the dollar amount of that?

Dr. ENZER. We will try to get the number on that.

Mr. PAONE. The amount we get reimbursable from the BLM is about $1.2 million in fiscal year 1981, and we are projecting that at about $3 million for fiscal year 1982.

Senator McCLURE. Isn't that awfully low? I look at the land assessment—and I'm referring now to page BM-72—in which land assessments are $12,756,000, and then I look down the chart a little further and I see land assessments under reimbursable program, $2,520,000.

Mr. PAONE. That is correct, sir.

Senator McCLURE. One-sixth.

Mr. PAONE. The amount of acreage is probably in the same proportion.

Senator McCLURE. Well, BLM has almost—has more acreage than the Forest Service has.

Mr. PAONE. BLM has——

Senator McCLURE. Excluding Alaska. That's not true, it's about equal.

Mr. PAONE. BLM has approximately 18 million acres to be studied in a similar fashion as our Forest Service wilderness study areas, and under FLPMA, the work needs to be completed by 1991. The Department is currently—and BLM specifically—in the process of accelerating this program.

Senator McCLURE. How many acres did you do for the Forest Service?

Mr. PAONE. For the Forest Service we have done, by the end of this fiscal year, approximately 25 million acres of wilderness study areas.

Senator McCLURE. That's not six times the 18 million you're going to do for the BLM?

Mr. PAONE. That's correct, sir, but the acreage is set for us, of course, under reimbursable account, by BLM. They determine the amount of acreage that we do.

Senator McCLURE. I will talk to them about that. Could you do more?

Mr. PAONE. Yes, sir. We have tables that indicate how much more we could do based upon the resources that would be provided as a pass through, that is both ceiling numbers and dollars.

ADEQUACY OF SURFACE MINERALS ASSESSMENT

Senator McCLURE. I wish the press were here again. They are the ones that need to have the information as to how good that assessment is and what it means and what the limitations are. I think both you and I know.

Mr. PAONE. That's a cursory examination.

Senator McCLURE. Yes. It is very valuable, but it is very limited. It needs to be done, but it certainly does not tell us what the mineral values are on those lands.

Mr. PAONE. That's absolutely correct.

Dr. ENZER. And without drilling, sir, we will not know what the values are.

Senator McCLURE. And it doesn't even justify extensive drilling in all of those areas. That is one of the reasons why we have left the wilderness areas open to exploration.

Mr. PAONE. A good example of that, sir, would be in Idaho. As you know, in the River of No Return Wilderness Area there are the cobalt extensions from the special management zone.

Senator McCLURE. We now have a wilderness in which mining is the dominant use.

Mr. PAONE. That is correct. That deposit is, perhaps, 400 or 500 feet in depth. The type of land assessment examinations that we do would never discover that.

Senator McCLURE. Well, I appreciate the limitations you're working with, and there's no point in belaboring that subject between ourselves again. It is a matter of public understanding. I oftentimes think that the public is misled by the idea that we are making mineral surveys, and they believe that we know something which we simply don't know. There is a danger to us in that having made the mineral surveys, then the public can be easily misled into the idea that we know what kind of resource assignments we are making on special management designations of lands. Nothing could be further from the truth and more and more dangerous for our country.

But you know that and I know that, and nobody else is listening to us right now, anyhow.

Dr. ENZER. Perhaps part of the answer, Mr. Chairman, is our Secretary's approach, who would like to have multiple use and exploration activities by private companies. Perhaps a combination between Federal efforts and private efforts, will give us a better idea of what is available on public lands.

Senator McCLURE. Well, I think that is essential. I think it is also essential that we continue to maintain the availability of the public lands for that assessment and to continue to do what we have said as a matter of policy for the last 20 years almost, that the wilderness areas would be available for assessment of that potential, and now we see out in the State of Montana when they start in trying to make that assessment on the Bob Marshall Wilderness, they are immediately struck by actions taken by a committee in the other body to limit that availability in spite of the provisions of the 1964 Wilderness Act, in direct controvention of those provisions of the 1964 Wilderness Act.

Sometime, somewhere, the public is going to have to understand that there is no free lunch in minerals either. That they occur where God made them occur, and not where man desires. And there is an economic price paid when we decide we're not going to look for or to find or to utilize the resources when they do occur. But I know you gentlemen know that better than I.

Dr. ENZER. And you know as well as we do, Mr. Chairman, that our Secretary shares your view.

Senator McCLURE. Yes, he does indeed, and I'm grateful for that, and I am an enthusiastic supporter of that view on his part, and we've discussed it often. But we simply have to, you know, the Secretary doesn't make public policy. He responds to public policies as well. And neither does Congress make public understanding. It makes policies based upon public understanding and the public doesn't understand these issues; we won't have public policies that are appropriate. That perhaps means that we have a responsibility. It means that you have some opportunity and some responsibilities in terms of public awareness of the issues and the gravity of those issues. I don't think either you or we conduct that responsibility.

Dr. **Enzer**. One of the side benefits, if I can call it a side benefit, Mr. Chairman, of our Secretary's efforts, and the resulting attention he gets in the press, may well be a better discussion and airing of these issues and more public awareness of what the basic situation is.

WILD HORSES AND BURROS MANAGEMENT

Senator **McClure**. Yes, I think you are right, and I applaud that observation. I'm reminded, however, of one recent statement that he made that makes eminent sense to anybody who knows what he is saying, but was treated quite differently in the newspapers, who obviously didn't understand with relation to the management of the size and numbers of the wild horse herds. And he said, just as we managed game animals, we are going to have to manage the numbers of wild horses and burros on the public lands. It immediately got headlines, even in Idaho newspapers, that he is going to manage wild horses as they are going to be game animals, and that immediately raised the specter of the National Rifle Association going out yearly to shoot all of the wild mustangs. That generates headlines, but it doesn't do much to generate public understanding of management issues.

ADDITIONAL COMMITTEE QUESTIONS

Well, I do appreciate your comment. I do have an extensive number of other questions to submit to you for response in writing, and I will appreciate that.

[The following questions were not asked at the hearing but were submitted to the Department for response subsequent to the hearing:]

Additional Committee Questions

Question. How about summarizing the current safety and health issues for us here—what are the most dangerous situations still facing miners? Please provide for the record a detailed trend comparison (table and narrative) of miner and processor safety and health issues for the past 10 years, compared to the Bureau's distribution of research funding over the same time period.

Answer. Miners still face both long and short term health and safety risks while working. "Black lung" (coal workers' pneumoconiosis) continues to be a major long term cause of deaths and permanent disabilities. Cancer caused by exposure to radiation and hearing loss caused by excessive noise levels of mining equipment are other long term problems. Short term risks are different in that there is an immediate danger to the miner.

The constant threat of the mine roof or rib falling continues to be a major problem. Deaths and injuries due to miners working near machinery and equipment have not been solved and continue to be a risk. The threat of an explosion such as the April 1981 explosion at Dutch Creek mine in Colorado is always present and must be dealt with effectively.

However, new problems are constantly surfacing and must also be addressed. These include methane in salt and oil shale mines, changing technology, outbursts and heat stress problems as mines get deeper, and the issue of compensation for long term health related problems.

Significant progress has been made in lowering the dust levels in mines since establishment of the Federal dust standards under the Federal Coal Mine Health and Safety Act of 1969 and the inception of the Bureau's respirable dust research program.

Over the past decade the average dust concentrations in mines have decreased from over 5 mg/m³ to below 2 mg/m³. According to the National Institute for Occupational Safety and Health (NIOSH) the prevalence of coal workers' pneumoconiosis or "black lung" among current miners is 6 percent as compared to 15 percent in 1970. Although mines today are less dusty than a decade ago, there are still mines (longwalls) and processing mills that have great difficulty in complying with the current dust standards. To insure that the health of the miner is protected and future black lung compensation cost is reduced, which has totaled over $10 billion since 1970 and is now more than $1 billion annually, consistently effective preventive and protective measures must and will continue to be devised and adopted.

The budget for health hazard research over the past 10 years has reflected that concern. It has been adjusted accordingly, as in the case of respirable dust research, to address the most pressing health issues facing the miner, the mine operator, MSHA and the Bureau of Mines.

Examination of the accident data for the last 10 years shows that the fatalities in coal and metal/nonmetal mines have been reduced substantially. However, the nonfatal injuries have been increasing during this same period. Even though the fatalities have been reduced, the number is still unacceptably high. Expected increases in coal production will tend to raise the fatalities even higher and nonfatal injuries have been increasing despite our research efforts to lower them. Without the research, the numbers would be even higher. Actual comparison of specific categories of fatal and nonfatal injury data between 1970 and 1980 is difficult because the categories and the method of taking data have changed over the years.

The overall objectives and goals of the health and safety effort have changed little over the last 10 years. The Bureau is still striving to develop technology which will insure a healthy and safe workplace for the miners. The problem is that the easy solutions which may have large impacts on fatal and nonfatal injuries have been explored. Solutions now require a much broader perspective, such as taking newly developed technology and trying to adapt it to the mining problem. Reducing the fatal and nonfatal injuries requires capital intensive research and specialized manpower. With the expected increase in new, untrained miners and the changing mining technology to meet our projected energy requirements, the fatal and nonfatal injuries will only go up unless research by industry and Government can reduce them.

The bigger change in funding over the last 10 years has been in the area of industrial hazards and ground control problems. These two areas account for approximately 88 percent of the fatalities and 98 percent of the nonfatal injuries. The Bureau periodically reviews the accident data and makes adjustments to the program based on this review.

The following tables show accident trends for the last 10 years and the related research funding by the Bureau.

ACCIDENT TRENDS

	Fatal injuries		Nonfatal injuries	
	Coal	Metal/nonmetal	Coal	Metal/nonmetal
1970	260	165	11,500	12,300
1975	155	123	11,100	14,000
1980	129	103	21,570	16,575

RESEARCH FUNDING

[In thousands of dollars]

	1970	1975	1980	1982
Respirable dusts	2,090.5	2,388.6	4,705.0	4,735.0
Noise	45.0	806.5	2,930.0	2,572.0
Industrial hygiene	187.9	1,347.8	3,330.0	2,766.0
Radiation	15.7	1,080.4	1,210.0	1,058.0
Ventilation	(1)	83.6	900.0	822.0
Methane control	1,851.1	1,960.0	3,000.0	2,745.0
Fire and explosion prevention	1,302.1	4,650.8	5,300.0	4,831.0
Ground control	2,704.7	6,668.0	15,430.0	14,054.0
Industrial hazards	296.7	7,248.2	15,600.0	14,224.0
Systems engineer	379.1	4,296.2	3,365.0	3,050.0
Post disaster	3,623.3	1,638.2	2,600.0	2,356.0
Explosives	(2)	(2)	1,630.0	1,487.0
Total, H and S	12,496.1	32,168.5	60,000.0	54,700.0

[1] Ventilation research was not funded as a separate area in 1970.

[2] Explosives research was not funded as a separate area in 1970 and 1975.

Minerals Health and Safety Technology

Question: How much of your 1981 research funds, in total, are for contracts or projects that will expire in 1981, thus freeing up those research funds for reallocation in FY 1982?

Answer: In FY 1981, $10,393,000 worth of contracts and in-house projects will expire and be reallocated in FY 1982. This amount is approximately 18 percent of the total Minerals Health and Safety Technology Budget for FY 1981.

Question: How much of your research work is performed in-house versus by contract? Please provide for the record a statement of how the research program is managed; how research priorities are set; how the research program takes into account different regional problems in the USA and different problems in various materials; how the Bureau's 10 research centers and 4 field operations centers participate; how industry input is considered in the research program; and other appropriate comments.

Answer: During Fiscal Year 1981 in-house research is 44.3 percent versus 55.7 percent contract; in 1982 in-house research will be 49.6 percent versus 50.4 percent contract.

The research is managed by a Director, Division of Minerals Health and Safety Technology. Reporting to the Division Director are Branch Chiefs and managers for the principal research areas of Health, Accident Prevention and Disaster Prevention.

Research priorities are set based on formal and informal input from the total mining community with particular emphasis placed on long term health and safety statistical trends made available by MSHA and NIOSH. The Bureau carries forward a 5-year plan that is updated each year. The Bureau annually updates a Strategy Paper produced jointly with MSHA that sets forth the program philosophy and general problems that need attention. Specific project selection and prioritization is done jointly under a formal methodology agreed upon by the Bureau of Mines and MSHA. This methodology establishes a priority list of projects to be addressed by Bureau research.

Each year the joint Bureau and MSHA participants of this project selection process evaluate the methodology. The procedure and mechanics of the system have been modified each year to address the problems which have been identified through the implementation of the system. The FY 1982 methodology represents a viable priority selection process essential in integrating the short-term research needs of MSHA with the long-term research goals of the Bureau.

Project proposals describing the objectives, related contracts, costs, justifications and proposed work are submitted to the Bureau's Washington Office. Proposals include both in-house and contract research as well as continuing and new research efforts. Ideas are submitted from contractors, mining companies, MSHA inspectors and universities. The Bureau reviews the proposals, rejects all duplications, eliminates efforts which have previously been done, and sends the resulting list of projects to MSHA. MSHA reviews and submits additional projects that may not have been addressed. The remaining projects are the ones that are chosen on a priority basis during the joint Bureau/MSHA Ranking Meetings. Complementing these yearly Ranking Meetings are either quarterly or semiannual Review Meetings where researchers from both organizations discuss ongoing Bureau research. Ranking Meetings and Review Meetings are held for each functional technical area.

The ranking criteria used for the priority selection represent weighted numerical evaluation standards which address the three major areas of (1) Need for Research, (2) Technical Soundness, and (3) Technology Transfer and Implementation. Each of these three areas is divided into four sub-areas so that the evaluation involves assigning a 1, 2, or 3 rating to each of 12 evaluation criteria. During the ranking, the projects are discussed so that all evaluators are familiar with the content. The individual scores are combined to obtain a single numerical score for each project. Evaluators are chosen from each organization based on both their technical and program knowledge of the functional technical area. There are 3 evaluators from the Bureau and 3 from MSHA, so that each agency has equal representation. At the end of the Ranking Meetings, which typically cover 2 full days, the priority research project list is discussed along with overall program strategies. This priority list is then used by the Bureau program managers as a basis for developing the next year's research program.

Supplemental activities of the Bureau re priority setting have included formal input from a Secretary's Advisory Committee on Coal Mine Safety active from 1972 to 1977; information solicited at Open Industry Briefings from 1971 through the present where Bureau efforts and status are presented to the industry and other sectors of the mining community, and through 44 contract workshops conducted by universities in selected mining districts to assess problems and identify needs for research.

The above contract workshops at universities took into account different regional problems and problems in various materials; this was also true of the Open Industry Briefings, and for that matter the Secretary's Advisory Committee on Coal Mine Safety. The Bureau also participated in deliberations of an Interior advisory committee on metal mine safety and formally attended Department of Health, Education and Welfare advisory committee meetings on coal mine health.

Additional regional problems are brought to the Bureau directly by industry (e.g. diesel problems re oil shale currently under consideration with the Colorado Mining Associition), by MSHA (methane problem in oil shale), by MSHA and industry (e.g. the recent methane explosion in a Louisiana salt mine). Projects addressing these new problems are incorporated into the project selection and prioritization process and funded accordingly.

The Bureau's ten research centers are authorized to do inhouse research according to their availability and capability. They are also charged with writing the technical scopes of work for contract research and with providing technical project officers to represent the government in monitoring and evaluating the contract research. The research centers are also critically involved in the project selection and prioritization process as they make up the research review committees and the project ranking committees that work jointly with MSHA. The 4 field operation centers are not directly involved in the research but lend assistance upon occasion. For instance in 1981 the Eastern Field Operations Center in Pittsburgh was called upon for statistical assistance on coal reserves.

Industry input is received as described above and indirectly through their interaction with MSHA, NIOSH, and DOE who have formal memorandums of understanding with the Bureau. The Bureau participates in meetings of select industry committees (e.g. AMC diesels, BCR respirable dust, canopies, longwall, etc.) and associations (Colorado Mining Association Oil Shale Committee). The many Bureau-Industry cooperative 1981) and cost sharing agreements also facilitate industry input to the program.

All possible projects, whether received directly from industry and labor or indirectly through other government agencies dealing with the mining industry, are considered under the formal project selection and ranking methodology. An unsolicited proposal addressing a very urgent need can be considered on the merits of the case and if judged worthy of funding will be retrofit into the ongoing program.

Question: Your 1982 budget proposal for this activity is $54.7 million, down $5 million (-8%) from 1981 appropriations to date. About $4 million of this reduction is in "safety hazard reduction research" and the other $1 million reduction is in "health engineering technology research." Does the reduction reflect the relative distribution of economic impacts of those two research activities? What is the major difference between these two types of safety research programs? Which is the more important for the Federal government to support?

Answer: The reductions are not based on the relative distribution of economic impacts of those two research activities but rather on consideration of the health and safety of the miners.
The major difference between these two types of research programs is that health-related engineering addresses those health-related problems specified in Sec. 501 of the Federal Mine Health and Safety Act of 1977. The safety research per se addresses those hazards which can cause immediate injury or death at the workplace as a result of a mine accident, e.g. electrocution, roof falls, fires, explosions, etc. These requirements are stipulated under Sec. 301 for studies, investigations, and research to upgrade safety standards and to develop and promulgate new or improved standards that will provide increased protection to the miners in connection with hazards contributing to accidents. This type of safety research also addresses the Sec. 501 provisions for accident prevention. One type of research therefore addresses health protection of the worker and the other addresses accidents that may cause injury to workers.

The Federal Government has mandated research in both areas and the Bureau supports both activities.

Question: What is the European experience with the incidence of black lung and similar illnesses compared with the U.S.?

Answer: It is difficult to make a direct comparison between U.S. and Eurpoean experience with black lung disease or coal workers' pneumoconiosis (CWP). The prevalence of CWP in active American miners has decreased from about 15 percent in early 1970's to about 6 percent in 1978. This decrease was caused mainly by the retirement of older miners who had the disease, and the influx of a large number of new, young, healthy workers into the mines. The prevalence of CWP in British miners in 1978 was 6.9 percent, which is comparable to that of American miners for the same year. It was reported that 15 percent of West German coal miners had some stage of CWP in 1979. The methods used to control dust are similar in the three countries. Close cooperation between the Bureau of Mines and the British and German mining research organizations insures that any new developments in dust control technology are made known and evaluated under the different mining conditions in the three countries.

Question: All of the other health-related research initiatives are targeted for reduction in 1982, including radiation hazard research, industrial hygiene research, noise control research, and ventilation research. Why are those cuts less important than others?

Answer: With the exception of respirable dust, all research elements in the programs were reduced as follows:

Program	Amount Reduced	%
Health		
Respirable Dust	0	0
Noise Control	$350,000	6.7
Industrial Hygiene	$525,000	10.0
Radiation Hazards	$150,000	2.9
Ventilation	$75,000	1.4
Accident Prevention		
Ground Control	$1,350,000	26.0
Industrial Hazards	$1,350,000	26.0
Disaster Prevention		
Fire and Explosion Prevention	$460,000	8.9
Methane Control	$250,000	4.8
Post Disaster Rescue and Survival	$240,000	4.6
Explosions	$140,000	2.7
Systems Engineering	$310,000	6.0

As can be seen, respirable dust was retained at the current level. 21 percent of the cut came from health, 52 percent from accident prevention, and 27 percent from disaster prevention. These cuts approximate the funding to the three general areas. Within health-related research, the cuts reflect the respective priorities and the fact that the Congress in 1979 directed the Bureau to accelerate efforts to solve problems associated with respirable dust. Since that Congressional directive, the criticality of the longwall compliance problem has been made known to the Bureau by MSHA and the coal industry, and work on the longwall dust problem has been accelerated in cooperation with DOE and the industry.

Question: Is NIOSH being reduced in 1982?

Answer: The NIOSH FY 1982 budget has been reduced like the budget of other agencies. Since NIOSH does not have a separate budget line for mining-related research, we are unable at this time to estimate the impact of the FY 1982 reduction on this research area.

Question: All of the safety hazard reduction research projects are proposed for a cutback in 1982. Please provide for the record a list of contracts that will be funded in 1982, compared to 1981, by research project.

Answer: All safety hazard reduction research projects per se are not proposed for cutback in 1982; however, it is anticipated that all functional elements within safety hazard reduction research will face some cutbacks.

The comparison between FY81 and FY82 contract funding for the research elements is shown below.

Research Element	Funding ($ in thousands) FY81	FY82
Fire and Explosion Prevention	$1,548*	$1,151
Methane Control	711	566
Ground Control	4,729	4,174
Industrial Hazards	9,045	6,877
Post Disaster	1,584	1,121
Explosives	310	30
Systems Engineering (Research)	753	550

*Fire and explosion prevention research element funding in FY81 included one-time construction costs contribution to Lake Lynn fires and explosion test facility.

Question: What are the comparative injury and fatality rates for underground versus surface mining? What are the key risks and related research needs for open pit mining operations?

Answer: Comparative fatality and injury statistics for underground and surface coal mining are shown in the following tables.

Underground Vs. Surface Coal Mining Statistics:

Actual Injuries

	Fatal Injuries		All Injuries	
	Underground	Surface	Underground	Surface
1971	149	23	9,905	1,726
1972	128	21	23,053	3,714
1973	105	17	19,985	3,423
1974	97*	26	12,038	2,511
1975	111	35	15,969	3,381
1976	109	24	20,671	4,603
1977	100	29	18,445	4,824
1978	74**	17	13,240	3,435
1979	115	15	17,164	3,280
1980	100	22	16,965	3,089

*Coal Strike (11/12/74 to 12/6/74--26 days)
**Coal Strike (12/6/77 to 3/27/78--111 days)

Incident Rates***

	Fatal Injuries		All Injuries	
	Underground	Surface	Underground	Surface
1971	.17	.08	11.45	3.65
1972	.14	.08	24.58	13.55
1973	.11	.06	21.19	11.45
1974	.10	.07	12.58	6.68
1975	.09	.07	13.65	6.86
1976	.09	.05	17.09	8.77
1977	.08	.05	16.00	8.02
1978	.07	.03	12.73	5.67
1979	.09	.02	13.66	5.08
1980	.08	.03	13.85	4.65

$$\text{***Incident rate} = \frac{\text{number of injuries} \times 200{,}000}{\text{number of employee-hours}}$$

The key risks in open pit mining are accidents associated with haulage and machinery, with materials handling and hand tools, with slips and falls, with falls of rock and materials off highwalls, and the handling and use of explosives.

Pertinent accident statistics for recent years are shown in the following table:

Open Pit Mining

Fatal Injuries	78	79	80
Haulage	6	9	7
Machinery	4	1	5
Slips, Falls	3	0	1
Falls of Highwall	2	2	5
Explosives	0	1	1
Other	2	2	3
Total	17	15	22

All Injuries	78	79	80
Materials Handling	1,005	1,177	934
Slips, Falls	795	1,005	786
Machinery	580	499	464
Hand Tools	397	480	433
Haulage	360	313	319
Stepping, Bumping	328	142	100
Other	204	249	228
Total	3,669	3,865	3,264

The related research needs are reflected in the following representatives fiscal year 1982 projects that address the above risks:

Radar Transponder Anticollision Systems for Large Mine Haulage Trucks
Development of ROPS Performance Criteria for Large Mobile Mining Equipment
Surface Mine Equipment (Machinery/Slip, Falls) Safety Study
Investigation of Machinery Maintenance Related Accidents
Blasting Parameters that Affect Highwall Stability
Hazards of Explosives and Explosive Devices
Analysis of Equipment and Haulage and Materials Handling Accidents
Conveyor Belt Haulage Safety
Operational and Maintenance Safety Analysis of Large Run-of-Mine Rock Conveyor Belts
Driver Alertness Monitor for Large Haulage Vehicles

MINERALS ENVIRONMENTAL TECHNOLOGY

Question: Process waste control is practically eliminated in 1982, being proposed at $1.3 million, a reduction of 83% from 1981 levels of $7.2 million. Doesn't process waste control research have improved water quality as a primary benefit? Is it assumed that the industry will make up this reduction through an increase in its own research actions?

Answer: Improved water quality is the primary benefit obtained from process waste control research. A portion of this research is also directed toward the reduction in the environmental impact of air emissions and process solid waste disposal.

The Process Waste Control research program has as its goal the alleviation of the environmental impact of the metallurgical operations associated with the processing (but not mining) of non-fuel minerals. Since toxic substances are often mobilized in the process of extracting values from ores, the environmental consequences of mineral processing can be severe. Research, under Process Waste Control, has been divided into that which seeks to treat waste products from metallurgical processing and that which attempts to change the processing to better control the toxic components. The former, more immediately applicable, "end-of-pipe" research has been significantly curtailed. The process modification research, which includes all the longer-range research, has been deleted. This longer-range research deals largely with the release of inorganic toxic ions and with methods to lessen their mobility. It is likely that industry will continue its environmental research on the alleviation of specific problems at or near current funding levels.

Question: Please provide for the record a comprehensive list of other Federal agencies that have an annual environmental research program of $1.0 million or more, with a summary table reflecting total environmental quality research broken out into various categories.

Answer: Besides the Bureau of Mines, the Office of Surface Mining (OSM) and USDA's Forest Service are the only agencies with a surface reclamation environmental research budget for FY 1982 in excess of $1.0 million. OSM's research addresses short-term environmental regulation problems while the Bureau explores longer-range minerals-related mining and metallurgical environmental problems. Forest Service reclamation research is providing new information and technology to manage National Forest System lands where mineral development is involved.

Other programs have included reclamation within broad program goals. The Department of Energy's Office of Coal Mining has a proposed FY 1982 budget of $15 million for underground coal mining and $6.0 million for coal preparation research and no funding for surface work, thus no reclamation is included except subsidence. Other agencies such as the U.S. Geological Survey and the U.S. Environmental Protection Agency have environmental research programs in excess of $1.0 million, although we do not have funding details concerning expenditures in mineral land reclamation.

PERSONNEL TRANSFERS

Question: The FTP's related to the 1981 environmental program was about 437, and this is proposed to be reduced by 213, to 224 in 1982. How will this reduction take place, i.e. by transfer or RIF? Please provide a schedule showing, in practical terms, how this reduction would take place. If it is your contention that they will be transferred to the increasing Mineral Resources Technology program, please show by job title or personnel category the new needs and the current distribution, to show in practical terms whether or not this is a feasible program proposal. If a RIF is to be proposed, please provide estimated severance costs and a schedule.

Answer: The Mineral Resources Technology program personnel needs and the Minerals Environmental Technology program personnel are compatible by job title and skills. Physical scientists, metallurgists, and chemists for example, are qualified to contribute to either and/or both program(s). Therefore, the reduction will be accomplished through transfer of personnel working on Minerals Environmetal Technology program projects to Mineral Resources Technology projects. In practice, this will be accomplished by reassignment of personnel within the research facilities and not by a RIF.

Mineral Resources Technology

Question: Mineral resources technology research provides the basic data to solve future mining, processing, and production problems, including improving the efficiency of energy, equipment, and labor. May we assume, therefore, that investments in mineral resources technology research can be analyzed economically, that marginal rates of return for additional research investments can be approximated? Can research results be quantified since, after completion, we would know if they were successful or not? What type of research project in this category returns the highest dividends?

Answer: Some research efforts do lend themselves to economic analysis. For example, between 1957 and 1970 the Bureau spent approximately $2 million to develop a procedure for recovering iron from abundant, but previously unused, nonmagnetic taconite deposits. Today the iron ore industry has installed capacity to produce 8,000,000 tons of iron ore pellets annually from these nonmagnetic taconites, using Bureau-developed technology. At current prices, the annual value of these pellets is approximately $400 million. Similarly, Bureau expenditure of about $175,000 between 1951 and 1954 on a method for producing columbium and tantalum resulted in a decrease in production costs for these metals from $120 per pound to about $30 per pound for tantalum and $10 per pound for columbium. The estimated value of this development, based on domestic production between 1962 and 1972 exceeded $40 million per year.

More frequently, because of the nature of research, quantitative analyses of research results are very difficult to develop. Such indices as numbers of papers published, number of projects pursued, or number of dollars spent per person, for example, do not adequately measure research results. Moreover, such indices are misleading because they do not adequately measure the quality of research or its contribution toward meeting national needs. The essence of the Bureau's technological research is to seek solutions to problems for which answers have not been found or are incomplete, rather than to increase profit. Furthermore, the degree to which a research effort is successful may not be apparent immediately upon completion. It may be several years before results are actually implemented.

No single category of research can be identified that can be expected consistently to return high dividends. One research project may require modest expenditure but produce a technological breakthrough that has dramatic economic impact. For example in the late 1920's the Bureau conducted a small investigation to develop a flotation method for phosphate ore. This research effectively increased recoverable U.S. phosphate reserves by 25%. Another project, such as the nonmagnetic taconite research, may produce a relatively small incremental improvement in technology that has significant economic impact because of the high volume of material that is produced with the improved technology. Finally, some research results are important for reasons that are not strictly economic. For example, Bureau research to produce ductile zirconium yielded new technology that is the primary basis for U.S. zirconium production. The first dividends from this research were in its contribution to national security, namely the nuclear reactors for submarines. Although only about 2,000 tons of zirconium metal is produced annually, this metal is an essential component of the entire nuclear industry.

Question: What is the total process and technology research and development budget for the mining and processing industries? Could you provide your best information on that for the record? What role do the Nation's mining colleges and universities play in the conduct of the Bureau's research program?

Answer: The best information we have is taken from the "Inventory and Analysis of Materials Life Cycle Research and Development in U.S. Industry 1977" published by the Committee on Materials (COMAT), a Federal Interagency Coordinating Committee. Funds for process and technology research and development in 1977 were estimated to be $288 million.

The Nation's mining colleges and universities, while few in number, play an important role in complementing and supplementing the Bureau's in-house research. The highly skilled academicians provide an expanded resource of knowledge for the Bureau. Many of the academic groups have, over the years, developed highly specialized areas of technology which it would not be economic for the Bureau to duplicate. Contacts between the Bureau and academic researchers provide for a mutually beneficial scientific environment in which to solve difficult and complex technical problems.

Increased Programs Under Amended Budget

Question: You have an overall increase of $8.6 million (+27%) budgeted for 1982 over 1981 appropriations to date for the resource technology program (Budget Amendment). What are the key increases here? Is any of the increase related to energy retrofit by the Bureau? Are the key program areas: conservation, substitution, and increased recovery?

Answer: The key increases in the Mineral Resources Technology program as part of the $8.6 million budgeted for 1982 are in the areas of chromium, and cobalt/nickel research, and in studies on physical chemistry. Funding allocations for these areas and for the other research areas encompassed by the increase are shown below.

	($000)
Chromium	$2,550
Cobalt/Nickel	1,450
Manganese	750
Titanium	700
Zinc	250
Tin	200
Physical Chemistry	1,000
Mining	500
Particulate Mineralogy	500
Process Water	400
Scrap	300
TOTAL	$8,600

No portion of the $8.6 million increase is related to energy retrofit.

The key program areas are:

	($000)
* Advancing Mineral Science and Technology.......... (increased recovery)	$4,100
* Conserving Domestic Mineral Resources............ (conservation)	$1,700
* Developing Domestic Mineral Resources.......... (substitution)	$2,800
TOTAL	$8,600

Question: Are the increases related to domestic resources (conservation: +$1.7 million (+27%) and development: +$2.8 million (+30%)) targeted to our most critically short supply of strategic minerals, such as cobalt, chromium, platinum, nickel, and manganese? Is the development of artificial, synthetic, or abundant natural substitutes part of this research proposal? What is the effort focused on--process technology to be able to use available resources or materials that could be developed as a substitute?

Answer: The increases related to domestic resources (conservation: +$1.7 million, and development: +$2.8 million) are targeted to critical and strategic minerals as follows:

* Conserving Domestic Mineral Resources...................... - Chromium, Manganese, Cobalt, Nickel, Tin, and Improved Scrap Sorting.	$1,700,000
* Developing Domestic Mineral Resources...................... - Chromium and Cobalt.	$2,800,000

The development of substitutes for critical and strategic materials is a major part of the Mineral Resources Technology research program. The $2.8 million increase for Developing Domestic Mineral Resources is aimed at developing substitutes for chromium and cobalt. For example:

- Substitutes for Chromium in Stainless Steels
- Substitutes for Cobalt in Alloys, Ceramics, and Cutting Tools
- Development of Improved Magnesite Refractories to Substitute for Those Containing Imported Chromite
- Cobalt Substitutes in High-Intensity Permanent Magnets
- Surface Alloying of Iron-Base Castings
- Development of Noncritical Substitutes for Superalloys to be used for High-Temperature Applications

The objective of the research is to find substitute materials that provide adequate performance without having to use as much of the strategic and critical materials that are required to give best performance.

Analysis of Budget Request by Mineral

Question: Can you provide a budget breakdown by mineral for this program?

Answer: The budget breakdown by mineral, including noncommodity specific research, for the FY 1982 Mineral Resources Technology program is:

	($000)
Flotation and Flocculation	760
Minerals Thermochemistry	970
Fine Particle Characterization and Processing	900
Thermodynamics and Kinetics	1,065
Comminution	800
Electrodeposited Alloy Coatings	400
Corrosion	750
Wear- and Abrasion-Resistant Materials	1,767
Mining (Not Commodity Oriented)	5,675
Chromium	3,568
Cobalt	3,298
Iron (Ore Pelletizing and Firing)	1,330
Lead	700
Phosphate	400
Zinc	580
Lithium	665
Tin	210
Water Recovery and Recycle	400
Precious Metals: Platinum Group, Silver, Gold	1,607
Aluminum	135
Titanium	500
Nickel	545
Industrial Scrap and Waste	1,665
Sulfur	270
Zirconium/Hafnium	150
Tungsten	507
Vanadium/Uranium	325
Manganese	825
Alumina	1,190
Other	7,789
Energy Saving Improvements (Non R&D items)	900
Total Mineral Resources Technology	$40,646

Avoiding Duplication of Research by Industry

Question: What efforts are made to ensure that the Bureau's research on minerals mining and processing technology is supplementary to the industrial base of R&D, not duplicative or supplantive? For example, does the Bureau have public advisory input, including industry personnel, into its research priority setting?

Answer: Outreach to industrial, academic, and other governmental sectors involved with minerals mining and processing technology to obtain input for programming decisions is an important and continuing part of management of the Mineral Resources Technology program. Such efforts to ensure that the Bureau's research on minerals mining and processing technology is supplementary to the industrial base of R&D include:

* Direct cooperation on specific projects, for example:

  - Iron ore pellet induration - currently 20 industrial cooperators having interests in iron ore, coal, gas, engineering, and construction.

  - Lead processing - Amax Lead and Zinc, Incorporated
    Asarco, Incorporated
    Cominco, Limited
    St. Joe Minerals Corporation

  - Alumina miniplant - Aluminum Company of Canada, Limited
    Anaconda Aluminum
    Billiton International Metals
    Kaiser Aluminum and Chemical Corporation
    Reynolds Metals Company

- Mine raise hoist development - Homestake Mining Company
- Chromium recovery from spent chromic acid - Bell Helicopter
  Keeler Brass Company

* Memoranda of Agreements specifically for information exchange, for example:
  - The Fertilizer Institute
  - American Foundrymen's Society
  - National Association of Corrosion Engineers
  - American Iron and Steel Institute
  - National Association of Recycling Industries
  - Refractories Institute
  - (Over 70 cooperative agreements with the private sector and nine with other government agencies are currently in effect.)

* Contracts to obtain information on the minerals industry or advisory input:
  - Battelle-Columbus - Information on minerals industry R&D goals
  - National Materials Advisory Board - Identification of gaps and opportunities to make the Mineral Resources Technology program even more effective and responsive to national needs.

* Internal planning functions:
  - Direct contact with representative industrial firms and academic institutions.

Coal Mining Productivity Research

Question: Does the Department of Energy now have the responsibility for conducting research into increasing the productivity of coal mining operations? Has the new Administration endorsed that arrangement or are they going to review it?

Answer: Yes, as of October 1, 1977 and pursuant to Public Law 95-91, research and development relating to increased efficiency of production technology of solid fuel minerals was transferred from the Bureau of Mines to the Department of Energy.

The administration is currently reviewing most, if not all, of the Department of Energy's functions, including research into increased coal mining productivity.

Further, the House Committee on Science and Technology, in reporting favorably on the Department of Energy's appropriation bill (H.R. 3146) for FY 1982 expressed the following views:

* that an active mining R&D program is essential to the entire Federal effort of increasing the use of coal as an energy source

* that DOE's program has not yet developed an organized approach to planning and carrying out its R&D efforts

* that, for a coordinated Federal mining R&D program, all such R&D should be consolidated under the Department of the Interior, where all aspects of the mining process (productivity, health, safety, environments, etc.) can be considered.

DATA COLLECTION AND ANALYSIS

Question: Your testimony states that the Bureau "has been designated as the focal agency in the Federal government for minerals data collection and analysis..." Section 5 of the National Materials and Minerals Policy, Research and Development Act of 1980 requires a report to the Congress by October 21,

1981, detailing a plan to implement the Act. Will that plan be submitted on time? What will it say about the Bureau's plans?

Answer: Section 5 of the National Materials and Minerals Policy Research and Development Act of 1980 requires the submission of two reports to Congress by October 21, 1981 which may require input from the Bureau. First, the President must submit a report to Congress detailing a plan to implement the Act. This plan is to include recommendations for the collection, analysis, and dissemination of information concerning domestic and international materials demand, supply and needs. These responsibilities reside largely in the Bureau of Mines. Secondly, the Act requires that the Secretary of the Interior submit a report summarizing actions taken pursuant to subsection (e). The Bureau will respond in a timely manner to any requests for information to be included in either of these reports concerning those actions taken during the year in accordance with the provisions of this Act. To the extent that our minerals data collection and analysis coordination efforts relate to the 1980 Act, they will be discussed in an October report.

Question: Briefly, what steps has the Bureau taken in the past year or so to permit it to cope with a potential strategic minerals shortage. How long has it been since the Bureau had other than an Acting Director? How long was the last permanent Director in place.

Answer: In the past year or so the Bureau has taken a number of steps in the areas of strategic minerals, including the following:

(1) We have accelerated the development of the Minerals Availability System for 23 critical minerals

(2) We have accelerated the development of an automated mineral information system to provide rapid access to a wide range of minerals data

(3) We have expanded foreign data collection activities for production/consumption data and reserves

(4) We have, in conjunction with the Department of the Interior's Office of Minerals Policy Research and Analysis, undertaken the development of a Critical Minerals Index.

It has been five months since the Bureau has had other than an Acting Director. The last permanent Director was in place for 4 1/2 months.

Question: What is the Bureau's role relative to the Defense Department's role in analysis and data collection functions? How had that changed in the new Administration? Where does the Bureau get its raw data?

Answer: Pursuant to its Organic Act of 1910, as amended, the Bureau of Mines is the Government's primary agent for gathering, analyzing, and disseminating worldwide data and information concerning the production and use of nonfuel minerals and mineral-based materials. The Bureau works closely with the Department of Defense, and subordinate echelons such as the Air Force, Army, Navy and Marine Corps, to assist in identifying critical uses of strategic materials and the worldwide sources of such materials. There have been no basic changes in the Bureau's role, but the Administration is moving to strengthen ongoing Bureau activities. The Bureau of Mines collects domestic information from mines, concentrators, smelters, refiners, recyclers, and major users, and obtains import/export data from the Bureau of Customs through the Bureau of the Census. The Bureau's collection activity is not a sampling operation. Instead, the Bureau covers virtually every segment of the industry, making it possible to construct materials balance flowsheets which serve as a check on accuracy. Information on foreign mineral operations is abstracted from a variety of official publications of foreign governments, trade journals, individual company reports, and reports from U.S. embassies, supplemented by on-the-site inspections of foreign producing areas and facilities by Bureau personnel who are skilled mining engineers or are in related disciplines. Bureau information and projections are routinely made available to the Department of Defense, the Federal Emergency Management Agency, the National Security Council, the Central Intelligence Agency, and other users of mineral data, information, and analyses.

Question: What is the Bureau's role in the President's strategic minerals policy development effort? What other agencies are involved?

Answer: The Bureau's role in the President's strategic minerals policy development effort has not yet been determined. The Bureau does however, have a number of actual and planned activities in this area, including:

- Developing technological solutions to reduce reliance on imports
- Establishing a critical mineral index to serve as an early warning system
- Developing strategies showing policy and technological options for responding to disruption in supply or price of critical minerals
- Evaluating about 1,750 worldwide mineral properties and developing supply availability curves
- Collecting and disseminating information for guidance of Government and industry on domestic production/consumption for some 100 minerals commodities and on mineral developments in about 160 countries.

A subcommittee of the Cabinet council on natural resources and the environment has been formed to begin work on a nonfuel minerals policy. The current participants on this committee are: Department of the Interior, Department of Energy, Department of Transportation, Department of Housing and Urban Development, Department of Agriculture, Department of Justice, Department of Commerce, Department of Defense, Department of State, Office of Management & Budget, Department of Treasury, Council of Economic Advisors, Environmental Protection Agency, Federal Emergency Management Agency, National Security Council, Trade Representative, Office of Policy Development, General Services Administration.

IMPROVING THE MINERALS DECISION-MAKING PROCESS

Question: The purpose of information and analysis activities is to improve the decision-making process and support better decisions. Can you give us a couple of examples where the Bureau has played a primary role in improving decisions in the minerals area? Will the primary outputs be disruption strategies and information needed to guide the strategic stockpile? What will be the other hard copy outputs from this activity?

Answer: The Bureau plays an important role in providing information and analysis concerning the impact of existing policies or proposed government activities. To cite a few recent examples, the Bureau has (1) provided technical and financial analysis counsel to the Bureau of Indian Affairs and the Secretary of the Interior on mineral development proposals for Indian Lands; (2) provided technical, cost, and financial analysis of domestic cobalt supply options proposed to the National Security Council; and (3) provided an analysis of taxation implications on minerals of the President's proposal for economic recovery (HR2400). The output from each of these analyses provided guidance for subsequent decisions concerning the issues in question. Disruption strategies and information needed to guide the strategic stockpile are only two of the many outputs which are planned from our analytical activities. Other hard copy outputs will include assessments of taxation policy impacts on minerals availability, assessments of the impact of environmental, health and safety and other regulations on domestic mineral activities, assessments of the mineral content of Federal lands, as well as other analyses pertaining to those aspects of our mineral system which pose immediate or potential problems and which may require government action.

CURRENT STRATEGIC STOCKPILE BALANCE

Question: How is our current strategic stockpile balance? What mineral materials are we still short on? What are GSA's purchase plans for the rest of 1981 and what are the proposals for 1982? Is our basic minerals policy one of improving management of our short supply minerals or one of producing or acquiring them to meet our needs?

Answer: Table 1 details the stockpile status as of January 1, 1981, and shows the percentage completion toward those stockpile goals that are below the 100% level. GSA's specific purchase plans are confidential to prevent market interference, but a FEMA press release of March 13, 1981, indicated that "priority materials to be considered for acquisition for the national defense stockpile are: agricultural-based chemical intermediaries, (such as castor bean oil, pyrethrum), aluminum oxide, bauxite, cobalt, columbium, cordage fibers, fluorspar, manganese dioxide, medicinals (including opium salts), nickel, platinum group metals, rubber (including guayule), tantalum, titanium (including rutile), and vanadium." As for basic policy we must be and are now prepared to manage short supply minerals - particularly if a near-term emergency were to arise, while we also move to produce or acquire additional supplies over the longer term. The Administration has voiced strong support for extension of The Defense Production Act, Title I of which provides priorities and allocations authority needed for management of short supplies. At the same time, the Administration, following President Reagan's announcement of March 13, 1981, has embarked on a $100 million stockpile acquisition program for Fiscal Year 1981, while asking the Congress to approve disposal of certain stockpile excesses designed to provide the stockpile acquisition fund with revenues. Authorization for purchases of $120 million of needed materials in Fiscal Year 1982 has also been requested. The Bureau of Mines serves as the nucleus of the Emergency Minerals Administration which, pursuant to Executive Orders 10480 and 11490 as amended, in an emergency would administer priorities, allocations, and supply expansion programs. Meanwhile, the ongoing current research work of the Bureau is intended to assist in expanding domestic supplies of minerals and reducing dangerous dependence upon imports.

IMPACT OF LAW OF THE SEA TREATY ON MINERAL SUPPLY POSITION

Question: What are the implications for improving our strategic minerals supply position with a revised Law of the Sea Treaty?

Answer: An answer to this question will be provided following completion of the Administration's review of the law of the sea, which is now underway and in which the Department is participating.

Land Assessments

Question: How many acres of RARE II lands will be assessed in FY 82? How does this compare to prior years? What is the cost per acre for these assessments? Are they going up or down?

Answer: In FY 82, 4.3 million acres of RARE II lands will be assessed through fieldwork, and Bureau of Mines draft reports completed on 3.5 million acres. In FY 81 we plan to conduct fieldwork on 4.4 million acres and prepare draft reports on 3.4 million acres. In FY 80 we conducted fieldwork on 5.1 million acres and prepared draft reports on 0.6 million acres. In FY 79 the initial year of the RARE II program, we conducted fieldwork on 2.0 million acres and prepared draft reports on 0.1 million acres.

In FY 80-81, mineral land assessments cost per acre has ranged between $0.84 and $4.91. Costs vary greatly depending on terrain, climate, size of area, and degree of mineralization. We anticipate that costs will increase owing to the higher costs for personnel, services, and travel.

Question: When will the RARE II reviews be completed? Please provide a table showing, by years, acres completed and costs for the RARE II program.

Answer: RARE II mineral potential assessments will be completed by December 31, 1983.

A table showing acres completed and gross funding for the Bureau of Mines RARE II program is as follows:

	1979	1980	1981 e/	1982 e/
Acres Completed (millions)	0.1	0.6	3.4	3.5
Gross Funding (million dollars)	3.4	6.0	8.3	8.4

e/ Estimated

Question: Do non-RARE II wilderness acres get similar Bureau of Mines review? What have been the work accomplishments over the years in that activity?

Answer: Yes, the Forest Service Wilderness lands are investigated similarly. Of 25 million acres of Forest Service Wilderness lands, draft reports covering 17.4 million have been completed.

Question: Is there necessarily a relationship between the number of acres leased or available to be leased by BLM or by the Forest Service and the funding level for this activity? Why do we fund this activity? What is the minimum level it can be funded at and still meet a minimal level of outputs?

Answer: There is not a relationship between the number of acres leased by BLM or by the Forest Service and the funding level for this activity. The Bureau of Mines is not involved in leasing activities, and therefore does not fund these activities.

Overall Funding and Staffing Levels

Question: What was your original 1982 request to the Department in the Carter Administration by program? How was that revised? What changes did OMB make? Do you have a planning target yet for FY 1983? What is it, by program?

Answer: The following summary traces the Bureau's 1982 budget request by program from the Departmental request to the revised Reagan Administration request:

($ amounts in thousands)

Activity/Subactivity	Request to Department	Change	Request to OMB	Change	Carter Request to Congress	Change	Reagan Request to Congress
Minerals Research:							
Minerals Health & Safety Technology	60,000	--	60,000	--	60,000	-5,300	54,700
Minerals Environmental Technology	27,204	-3,681	23,523	-508	23,015	-10,700	12,315
Mineral Resources Technology	36,924	-4,419	32,505	-180	32,325	+8,321	40,646
Minerals Information:							
Data Collection and Analysis	23,668	-2,100	21,568	+52	21,620	-80	21,540
Land Assessments	12,838	--	12,838	-82	12,756	-47	12,709
Total, Mines and Minerals	160,634[1]	-10,200	150,434[1]	-718	149,716	-7,806	141,910

[1] In order to show comparability with the Carter Congressional request, the amount of the FY 1982 pay cost request associated with the FY 1981 pay raise has been included in the request to the Department and OMB ($3,496).

The FY 1983 OMB planning target is $140,600,000. The final distribution of the amount by program has not been determined.

Question: In total, how many personnel positions would you lost from your current authorized strength if we were to enact this Budget as requested? How would you cope with that type of reduction?

Answer: If this budget were enacted, the Bureau would lose a net of eight personnel positions. These eight positions would come from the Minerals Environmental Technology program and are associated with program reductions being proposed in this area. The Bureau should experience no problem in coping with this personnel reduction.

Question: Where would you recommend that the Committee take about a $10-15 million cut if we feel it is necessary? Please provide such a 10% budget reduction proposal to us for our use.

Answer: We cannot recommend any further cuts in the FY 1982 budget. However the following table gives a priority ranking listed from lowest to highest priority.

Priority Order of Certain Bureau Programs
($000)

Program	FY 1982 Budget Request	Lowest Priority Item	Cumulative Total of Lowest Priority
Mineral Land Assessments Reduces Wilderness Land Assessments by $531 thousand and Mineral Investigations by $819 thousand	$12,709	$1,350	$1,350
Minerals Health and Safety Technology Reduces Research in Coal Mine Safety by $3,141 thousand, Coal Mine Health by $647 thousand, Metal/Nonmetal Safety by $569 thousand, and Metal/Nonmetal Health by $341 thousand	54,700	4,748	6,098
Minerals Environmental Technology Reduces Water Management-Coal by $825 thousand, Land Restoration-Noncoal by $896 thousand, and Surface Stability-Noncoal by $847 thousand	12,315	2,568	8,666
Mineral Resources Technology Reduces research in Advancing Mineral Science and Technology by $3,725 thousand and Developing Domestic Mineral Resources by $776 thousand	40,646	4,501	13,167

QUESTIONS SUBMITTED BY SENATOR SPECTER

Funding for Construction of a Replacement Facility for Bureau of Mines Property Located at Pittsburgh, Pennsylvania

Question: Has the Bureau made an appraisal of the value of its Forbes Avenue property: Does it exceed the cost of construction of the replacement facility?

Answer: The Bureau had an appraisal of the value of its Forbes Avenue property made during May 1980. The market value of the property was $7.5 million. Estimated cost of construction of the replacement facility is $5.4 million.

Question: Do you anticipate that there will be any net cost to the United States?

Answer: We do not anticipate that there will be any net cost to the United States, in accordance with the authorizing legislation, P.L. 96-543.

Question: Would there be any cost savings in consolidating all of the Bureau's work force at one site (Bruceton) in the Pittsburgh area? What would they consist of?

Answer: A yearly savings of $97,500 is anticipated if Bureau of Mines employees presently locted at Pittsburgh are relocated as proposed. The breakdown of the $97,500 is as follows:

Utility Savings	$70,000
Employee Travel Time Cost	6,000
Vehicle Travel Cost	1,500
Elimination of Messenger Trips	20,000
TOTAL	$97,500

Question: Are there any advantages to early start-up to this project?

Answer: Yes, a significant dollar savings will be realized. A survey of construction costs in the Pittsburgh area indicates an increase of 1 1/4 percent per month. A delay of one year will result in an increased construction cost of at least $868,000. This would raise the cost above the authorized amount of $5,400,000 to $6,268,000 in order to meet the Bureau of Mines minimum requirement.

Question: Why does the University wish to acquire this land and property?

Answer: The University wishes to acquire this land and property in order to expand their academic and research programs particularly in the area of robotics. It will also provide access to part of their present property.

Question: If budget authority of $5.4 million were added to the Bureau's FY 1982 budget request for the engineering, design, and construction of a replacement facility, when would cash outlays actually begin?

Answer: The cash outlays would begin in FY 1982.

Question: Why, in terms of the timing of these outlays, would there be little, if any, effect on the Federal deficit?

Answer: The effect on the Federal deficit in FY 1982 would be equal to the outlays actually incurred during that fiscal year. These outlays are not now planned under the President's Budget recommendations before Congress. Following completion of construction, when and if authorized, Carnegie-Mellon University would purchase the Forbes Avenue property. Proceeds of the sale would be deposited in the Treasury to offset the construction cost and would be recorded as a net outlay reduction at that time.

QUESTIONS SUBMITTED BY SENATOR HEINZ, III

Funding for Construction of A Replacement Facility for Bureau of Mines Property Located at Pittsburgh, Pennsylvania

Question: Does the Bureau have any funding requested for the Carnegie-Mellon land transfer in any appropriation request now before the Senate?

Answer: No, the Bureau does not have a funding request before the Senate.

Question: What attempts has the Bureau made thus far to request funding for this worthwhile and needed project?

Answer: A supplemental request for funding was sent to the Office of Management and Budget but they have requested that it be deferred without prejudice at this time.

Question: In light of the streamlining of Government functions, does this project not make more sense today than it did last December when the Congress passed the legislation?

Answer: Yes, the consolidation of Bureau functions will result in greater efficiency and cost savings.

Question: What would be the advantages for the Bureau and the University if the Congress were to add funding to your FY 1982 budget request for this purpose?

Answer: The advantage to the Bureau will be an improvement in the effectiveness and efficiency of Bureau operations, better service to the public by housing Bureau personnel in one location, better working conditions for Bureau employees, and yearly cost savings. The University will gain a facility in which to expand their academic and research programs, especially in the area of robotics.

Question: Has the Bureau had any further discussions with Carnegie-Mellon University to insure that there is still real interest in this project?

Answer: The Bureau is engaged in current discussions which indicate that the University is extremely interested in this project.

QUESTIONS SUBMITTED BY SENATOR BYRD

Minerals Health and Safety Technology

Question: Are you aware of any studies or do you have any estimates which relate the efforts of the Bureau to reduced hazards, injuries and fatalities in the mining workplace? Are there any studies or estimates relating the efforts of the Bureau to reduced disabling diseases and associated compensation payments?

Answer: The Bureau's health and safety research activities are aimed at improving the health and safety conditions of the mine work place and to improve the injury and fatality incidence rates faced by the mine worker. Many influences impact health and safety conditions in the mines. Direct correlation between research accomplishments and improved working conditions are difficult to measure. There are various indicators of improving conditions that reflect research impact on mining. For example, the average respirable dust exposure of continuous miner operators has been reduced from 6.5 mg/m^3 in 1969 to 1.3 mg/m^3 in 1980. In the case of Bureau-developed cabs and canopy technology, the Mine Safety and Health Administration has verified that 175 miners lives have been saved in actual rock fall accidents. These would have been additional fatalities had the technology not been in place.

Further, research results have been used in the establishment of standards by many groups. For example, technical input from the Bureau has been used by the National Fire Protection Association in preparing a National Fire Code covering surface mine mobile equipment. Also, the Bureau has developed fire protection systems that sense heat, warn of the hazard, and automatically extinguish the fire on large mobile equipment. These systems have been installed commercially on over 4,000 pieces of mining equipment. Not only does it protect the operators from injuries resulting from fire and those caused by jumping from equipment, but it is cost effective in the form of reduce insurance premiums. In the case of improved visibility in both surface and underground mines, the Bureau has provided new technology that enables equipment operators to see into danger areas which were blind to them before the technology was developed. Similarly, the Bureau developed technology that has improved mine illumination levels to enhance the safety of the working place.

The Bureau of Mines booklet describing recent research accomplishments that impact the miners working place, titled "Technical Highlights: Health and Safety Research, 1970-80," is attached. (The material has been retained in the Committee files.)

Question: The current Administration is requesting $54,700,000 for "Minerals Health and Safety Technology," a reduction of $5,000,000 below the current 1981 appropriation. How do you justify such a decrease? In your statement, you indicate that lower priority and less critical elements will be reduced in scope or deferred. What are these lower priority and less critical elements, how much will they be reduced and which ones will be deferred? What will be the adverse impact of these reductions and deferrals on the health and safety of coal miners?

Answer: The reduction in Minerals Health and Safety Technology was made as part of the President's Economic Recovery Program in which a considerable number of public programs were reduced in an overall effort to lower government expenditures.

This decrease in funding affected all elements of research except respirable dust. To support the reduction, a critical review was made of the entire research program and specific research efforts. The Division has determined that the new FY 1982 budget offered represents the balanced, but limited, program that can most capably meet the needs of the Nation, the industry, and minerals workers. We have developed a high degree of coordination and prioritization of our program with the industry and government agencies.

The listing of lesser priority projects outlined herein is based upon the Division's knowledge of program priorities as defined by industry, government agencies, union, academia, and others who impact the decision-making process. Priorities do fluctuate in any time frame. Therefore, it may become necessary to eliminate some of those projects scheduled to be deferred and/or defer some projects that are now planned to continue on schedule. Those projects currently considered less critical, as well as their impact on the health and safety program, are on the attached sheets.

IMPACT OF BUDGET RESTRICTIONS

INDUSTRIAL HAZARDS TOTAL DOLLARS $1,350,000

FY82 Impact	Longterm Impact
CANCELLED PROGRAM PLANS	
1. Telephone Communication Systems for Deep Vein Metal Mine--Terry C. Cory, Inc.	-Delays development and testing of improved communication systems. Had originally planned to have a major effort culminate in FY84 with achievements in prototype communication systems.

FY82 Impact	Longterm Impact
2. Testing Criteria for Potting Materials--Southwest Research Institute	-Limits safety improvements for mine electrical systems (i.e., permissible equipment performance standards, mine cables). (Item 2) Potting materials: major effort planned to end FY83 delayed. This research impacts other studies on potting materials used, i.e., long-term-aging effects. (Item 3) FY83 the development of an improved cable reel was scheduled and is now delayed.
3. Shuttle Car Cable Reel Improvement--Jeffery Machine	
4. Belt Cleaner Residue Collection and Disposal Methods--RFP	-Delays completion of research on improving safety of conveyor systems.
5. Human Factors and Hazard Analysis of Longwall Mining--RFP	-Limits evaluation, development, and validation of training methods and programs for workers and supervisory and management personnel. (Item 5) Effort postponed until FY83 or probably beyond. This research would have produced recommendations for training materials for safety in longwall mining. (Item 6) Effort delayed until FY83 or beyond. This was to be first attempt at training programs for mill/preparation plants.
6. Improved Mill Maintenance Training--RFP	
7. Factory Integration of Optimized Operator Compartments for Newly Designed Face Haulage Vehicles for Use in Low Coal Seams--RFP	-Defers development of methodology to comply with cab/canopy regulations in low coal.
8. Assessment of the Application of Robotics Technology in the Development of a New and Safe Underground Mining System--RFP	-Defers innovative research methods to comply with canopy/cab regulations through replacement of human operator at the hazard area.
MODIFICATIONS REDUCED/DISCONTINUED	
1. Telephone Communication System--Terry C. Cory, Inc. (ongoing project)	-Part of large research effort on developing communciation systems now delayed. (see comments above Cancellations #1)
2. A Benefit/Cost Approach to Coal Mine Training: A Practitioners Veiwpoint--W.Va. University	-Study for interagency utilization (MSHA) now postponed. MSHA emphasizes programs to impact high injury rates.
3. Development of Materials and Strategies for Normal and Emergency Operation of Equipment--WAI	-Research for MSHA/Industry use in regulation compliance now delayed with a possible reduction in scope of work.
4. Development of a Safety-Oriented supervisory and Management Training Program for the Underground Coal Mining Industry--HUMMRO	This project to develop and disseminate training materials by workshops will be discontinued.

GROUND CONTROL--ENGINEERING TOTAL DOLLARS $1,350,000

FY82 Impact	Longterm Impact
CANCELLED PROGRAM PLANS	
1. Develop Integrated Geophysics for Mining Problems--Planned RFP	-Development of integrated geophysical techniques for hazard detection will be solely dependent upon in-house efforts.
2. Improved Subsurface Control Data for High-Resolution Seismic and Acoustic Reflection Data--Planned RFP	-Commercial applications of these geophysical tools will be significantly delayed.
3. Field Guide for Identification of Cored Rock in the Illinois Basin--Planned RFP	-Compilation of core books for major coal fields will be interrupted indefinitely.
4. Mechanized Scaler--Battelle	-Optimum system will not be developed.
5. Slurry Bolter--FMA or Terra Tek-	-Increased risk in commercialization of Inorganic Grout.
MODIFICATIONS REDUCED/DISCONTINUED	
1. Safety and Health in Underground Mine Waste Disposal--FY81 RFP in process with limited scope of work	-The exploratory work funded in FY81 will not be sufficient to provide comprehensive health and safety guidelines for MHSA and the industry, while the interest in undergound mine waste disposal is growing rapidly.
2. Establish Ground Control Data Acquisition System--Proposed In-house project	-The establishment of ground control engineering and geologic data repository will be postponed and improvements in ground control design will be slowed down.
3. Stress Control Technique for Entry Design--Proposed In-house project	-The industry will continue to have difficulty in visualizing the benefit of this innovative mine design method without Bureau research.
4. Demonstration of Single-Entry Longwall Mining--Planned contract to be deferred; a part of the planning work will be done In-house	-It will be difficult to launch the demonstration without sufficient funds. In-house effort will maintain the continuity of research on this subject; however, this budget cut may distract the industry's interest in participating in this research and thus delay potential adoption of single-entry mining system.
5. Develop Equipment to Expedite the Installation of Roof Trusses--Bendix Corp.	-Could result in loss of cooperation and additional funds because of delays.

FY82 Impact	Longterm Impact
6. Pumpable Bolt Field Test--RFP	-"Cuttable" Roofs Bolts that will increase both safety and productivity in thick seams will not be developed concurrent with need.

INDUSTRIAL HYGIENE TOTAL DOLLARS $525,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Sampling and Analysis of Engine Contaminants--A. D. Little Co.	-Ongoing efforts to characterize and identify diesel exhaust contaminants as they change in composition in underground mine environment due to time and dilution factors will not be continued. This research would have contributed to planned program efforts to rank order the health severity effects of the vast number of toxic airborne contaminants in mines and mineral processing facilities.
2. Construct Diesel Engine Facility	-A diesel facility to test emission control devices in underground mine environment is needed. Presently work done with cooperation of a mining company and testing is continually interrupted by mine production needs, union regulations and strikes. A Bureau test facility would greatly reduce time to test devices, provide for more reliable test techniques, and reduce costs.
3. Develop Water Injection Techniques for Control of Diesel Engine Exhaust Emissions--Southwest Research Institute	-Phase I feasibility study completed which proved project worthwhile. Research has shown that water injection techniques substantially reduce diesel exhaust particulate emissions while reducing many other contaminants in the exhaust. Project terminated due to lack of funds. Research is needed to develop hardware so that emission control techniques can be adapted to diesel mine equipment.

METHANE CONTROL TOTAL DOLLARS $250,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Investigate Available Equipment for Directional Drilling of Coalbeds for Methane Drainage	-Deferment of further development of drilling technology for methane drainage. -Increase in cost of drilling technology for research. -Delay in the technology transfer of drilling technology for methane drainage.

FY82 Impact	Longterm Impact
2. Reduce Effort in Salt Dome Methane Migration Study	-Delay of the development of control technologies for salt mines due to a lack of fundamental knowledge. -Delay basic research for other metal and nonmetal mines and future development of control technologies.

POST DISASTER TOTAL DOLLARS $240,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Develop Improved Emergency Communication	-Delay implementation of effective trapped miner location equipment in underground mines. -Delay technology transfer of effective emergency communication equipment.
2. Adapt Coal Mining Technology to M/NM Mining	-Delay implementation of oxygen self rescuer in M/NM mine.

FIRE & EXPLOSIONS TOTAL DOLLARS $460,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Fire and Explosion Hazards of Unattended Electrical Equipment (Air Compressors & Locomotives)	-Eliminate study of current technology in practice by site visits. -Delay technology application by 2 years. -On the average: expect 30 electrical fires, 8 injuries/year and 2 deaths/year from fires.
2. Fire Sensing of Large Drag Lines	-Delay technology transfer to mine operator. -Delay reliability testing--3 years. -On the average: 20 fires per year at $1,000,000 per fire in lost production.
3. Safe Fire Door	-Delay development of door until funding available.

SYSTEMS ENGINEERING TOTAL DOLLARS $310,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Conduct Survey of Coal Mining Equipment	-Delay establishment of updated data base by two years. -Delay evaluation of potential safety problems and their frequency of occurrence. -Make it more difficult to refine research objectives owing to lack of data.

FY82 Impact	Longterm Impact
2. Analyze Ecomonics of Improved Anticollision Devices	-Delay technology application by one to two years. -Delay useful information to improve on safety and minimize property damage.

EXPLOSIVES PROGRAM TOTAL DOLLARS $140,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Evaluate Alternate Initiation Systems	-Delay evaluation of safety aspect of newly developed initiation systems. -Make it more difficult to define research objectives. -Delay technology transfer to the mining industry.
2. Develop Safer Methods for Detecting and Handling Misfires	-Delay essential technology transfer to the mining industry. -Delay addressing a significant safety problem now of concern to shot fires. -Make it more difficult to refine research objectives and develop needed safety measures for combatting misfires.

NOISE CONTROL. TOTAL DOLLARS $350,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Implementation of State of the Art Noise Control Technology--Roberts and Schaefer	-Project suffered major reduction in scope of work. Originally planned a 400K per year project: (1) detailed study of coal prep plant noise controls was to be conducted (2) a cooperating company was found who would allow noise control measures to be designed into the plan and implemented during plant construction (3) after plant was operational, comprehensive effort was to be conducted on measuring and analyzing noise levels in plant (4) preparation of handbook.
2. Flammability Criteria for Noise Control Products Used in Underground Coal Mines--Wyle Labs	-Project will be phased out. Effect: Flammability criteria will not be completed and material testing will be cancelled.

RADIATION HAZARDS TOTAL DOLLARS $75,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Develop Hardened Version of Electronic Radon Daughter Dosimeter--RFP	-Delays application and commercialization of personal dosimeter system. Planned end in FY82 deferred.

VENTILATION TOTAL DOLLARS $150,000

FY82 Impact	Longterm Impact
CANCELLED PROJECT PLANS	
1. Ventilation Stoppings for Salt, Limestone, and Mines with Large Cross-Sectional Areas--RFP	-Research on stoppings to control underground airflow in mines with large airways (60' x 60') will not be initiated.

Minerals Resources Technology

Question: Please provide for the record a listing of the strategic critical materials being stockpiled by the United States, along with the stockpile goal and the current total inventory for each.

Answer: Table 1 lists the 93 strategic and critical materials stockpiled pursuant to the Strategic and Critical Materials Stock Piling Act by the General Services Administration under the direction of the Federal Emergency Management Agency (FEMA). Table 1 lists the stockpile goal and inventory as of January 1, 1981, and, for those materials for which goals have not been achieved, the percentage of achievement. Other strategic materials in government stockpiles include 40 billion cubic feet of helium stockpiled by the Bureau of Mines under the Helium Act Amendments of 1960 (no specific goal per se), and 150 million barrels of oil stockpiled by the Department of Energy in its Strategic Petroleum Reserve (with a goal of 750 million barrels by 1989).

Question: Please discuss those minerals and metals which are currently below the stockpile goal and indicate your concerns and plans for remedial action.

Answer: With respect to mineral materials below strategic stockpile goals, the Bureau of Mines works closely with FEMA in the development and implementation of stockpile acquisition plans currently under way at the rate of $100 million in FY 1981 and for which the President has requested $120 million for FY 1982. Specific acquisition targets are classified. The Bureau of Mines also is working closely with FEMA in the development of supply expansion programs under Title III of the Defense Production Act covering cobalt, titanium, refractory-grade bauxite, and guayule rubber. However, no Title III funding for nonfuel minerals is as yet available. Further, Bureau of Mines research intended to develop domestic resources of short supply materials and to develop acceptable substitutes or alternate materials includes:

> Producing alumina, cobalt, chromium, columbium, nickel, platinum group metals, tantalum, titanium, tungsten, and vanadium from complex or low-grade domestic resources including the Duluth Gabbro, the brines of Searles Lake, California, and the laterite deposits of the Pacific Northwest.

Reducing demand for critical minerals by developing substitutes where practical for cobalt, chromium, platinum, tin, and refractory bauxite. This research includes efforts to produce materials with thin, durable coatings that can replace alloys prepared from critical minerals for use in severe service environments.

Recovering cobalt, chromium, lead, nickel, tin, and vanadium from secondary materials such as lead smelter wastes, spent etching solutions, and superalloy scrap.

Table 1. FEMA's STOCKPILE GOALS, (DESIRED INVENTORY MIX), AND INVENTORIES AS OF JANUARY 1, 1981

Less-than-100% items are underlined, and for these the % on hand is also shown

		Goal		Inventory
Aluminum Metal Group	48	7,150,000	ST Al	3,444,064
(Alumina)		0		0
(Aluminum)	0	700,000	ST	1,733
(Bauxite, Metal Grade, Jamaica Type)	42	21,000,000	LDT	8,858,881
(Bauxite, Metal Grade, Surinam Type)	87	6,100,000	LDT	5,299,596
Aluminum Oxide, Abrasive Grain Group	41	638,000	ST Abrasive Grain	259,124
(Aluminum Oxide, Abrasive Grain)		0	ST	50,904
(Aluminum Oxide, Fused, Crude)		0	ST	249,867
(Bauxite, Abrasive Grade)	0	1,000,000	LCT	0
Antimony		36,000	ST	40,730
Asbestos, Amosite		17,000	ST	42,534
Asbestos, Chrysotile		3,000	ST	9,958
Bauxite, Refractory	12	1,400,000	LCT	174,599
Beryllium Metal Group	87	1,220	ST Be Metal	1,061
(Beryl Ore 11% BeO)		18,000	ST	17,987
(Beryllium Copper Master Alloy)	94	7,900	ST	7,387
(Beryllium Metal)	57	400	ST	229
Bismuth	95	2,200,000	LB	2,081,298
Cadmium	54	11,700,000	LB	6,328,809
Castor Oil (Sebacic Acid)	23	22,000,000	LB	5,009,697
Chromium, Chemical & Metallurgical Group	87	1,353,000	ST Cr Metal	1,173,230
(Chromite, Chemical Grade Ore)	36	675,000	SDT	242,414
(Chromite, Metallurgical Grade Ore)	78	3,200,000	SDT	2,488,043
(Chromium, Ferro, High Carbon)		185,000	ST	402,696
(Chromium, Ferro, Low Carbon)		75,000	ST	318,892
(Chromium, Ferro, Silicon)	65	90,000	ST	58,355
(Chromium, Metal)	19	20,000	ST	3,763
Chromite, Refractory Grade Ore	46	850,000	SDT	391,414
Cobalt	48	85,400,000	LB Co	40,802,393
Columbium Group	52	4,850,000	LB Cb Metal	2,510,528
(Columbium Carbide Powder)	21	100,000	LB Cb	21,372
(Columbium Concentrates)	32	5,600,000	LB Cb	1,780,463
(Columbium, Ferro)		0	LB Cb	930,911
(Columbium, Metal)		0	LB Cb	44,851
Copper	3	1,000,000	ST	29,048
Cordage Fibers, Abaca	0	155,000,000	LB	0
Cordage Fibers, Sisal	0	60,000,000	LB	0
Diamond, Industrial Group		29,700,000	KT	42,929,316
(Diamond Dies, Small)	42	60,000	PC	25,473
(Diamond, Industrial, Crushing Bort)		22,000,000	KT	23,692,782
(Diamond, Industrial, Stones)		7,700,000	KT	19,223,798
Feathers & Down	0	1,500,000	LB	0
Fluorspar, Acid Grade	64	1,400,000	SDT	895,983
Fluorspar, Metallurgical Grade	24	1,700,000	SDT	411,738
Graphite, Natural - Ceylon, Amorphous Lump	87	6,300	ST	5,498
Graphite, Natural - Malagasy, Crystalline	90	20,000	ST	17,911
Graphite, Natural - Other than Ceylon & Malagasy		2,800	ST	2,802
Iodine		5,800,000	LB	8,013,074
Jewel Bearings	57	120,000,000	PC	68,772,719
Lead	55	1,100,000	ST	601,036
Manganese Dioxide, Battery Grade Group		87,000	SDT	247,827
(Manganese, Battery Grade, Natural Ore)		62,000	SDT	244,816
(Manganese, Battery Grade, Synthetic Dioxide)	12	25,000	SDT	3,011
Manganese, Chemical & Metallurgical Group		1,500,000	ST Mn Metal	1,586,581
(Manganese Ore, Chemical Grade)		170,000	SDT	221,044
(Manganese Ore, Metallurgical Grade)		2,700,000	SDT	3,378,713
(Manganese, Ferro, High Carbon)		439,000	ST	599,978
(Manganese, Ferro, Low Carbon)		0	ST	0
(Manganese, Ferro, Medium Carbon)		0	ST	28,920
(Manganese, Ferro, Silicon)		0	ST	23,574
(Manganese, Metal, Electrolytic)		0	ST	14,172
Mercury		10,500	Flasks	191,391
Mica, Muscovite, Block, Stained & Better	84	6,200,000	LB	5,212,444
Mica, Muscovite Film, 1st & 2nd Qualities		90,000	LB	1,274,495
Mica, Muscovite Splittings		12,630,000	LB	19,498,277
Mica, Phlogopite Block	62	210,000	LB	130,745
Mica, Phlogopite Splittings		930,000	LB	2,019,294
Molybdenum Group		0		0
(Molybdenum Disulphide)		0		0
(Molybdenum, Ferro)		0		0
Nickel	0	200,000	ST Ni + Co	0
Opium Group	55	130,000	AMA LB	71,303
(Opium Gum)		0	AMA LB	31,795
(Opium, Salt)	30	130,000	AMA LB	39,508
Platinum Group Metals, Iridium	17	98,000	TrOz	16,991
Platinum Group Metals, Palladium	42	3,000,000	TrOz	1,255,003
Platinum Group Metals, Platinum	35	1,310,000	TrOz	452,640
Pyrethrum	0	500,000	LB	0
Quartz Crystals		600,000	LB	2,423,036
Quinidine	18	10,100,000	Av Oz	1,800,462
Quinine	72	4,500,000	Av Oz	3,246,164
Rubber	14	850,000	LT	119,208
Rutile	37	106,000	SDT	39,186
Sapphire & Ruby		0	KT	16,305,502
Silicon Carbide, Crude		29,000	ST	80,548
Silver (fine)		0	TrOz	139,500,000
Talc, Steatite Block & Lump		28	ST	1,092
Tantalum Group	33	7,160,000	LB Ta Metal	2,391,940
(Tantalum Carbide Powder)		0	LB Ta	28,688
(Tantalum Metal)		0	LB Ta	201,133
(Tantalum Minerals)	30	8,400,000	LB Ta	2,551,302
Thorium Nitrate		600,000	LB	7,145,112
Tin		42,000	LT	200,452
Titanium Sponge	17	195,000	ST	32,331
Tungsten Group		50,666,000	LB W Metal	81,216,792
(Tungsten Carbide Powder)		2,000,000	LB W	2,032,942
(Tungsten, Ferro)		0	LB W	2,025,361
(Tungsten Metal Powder)		1,600,000	LB W	1,898,911
(Tungsten Ores & Concentrates)		85,450,000	LB W	88,436,637
Vanadium Group	6	8,700	ST V Metal	541
(Vanadium, Ferro)	0	1,000	ST V	0
(Vanadium Pentoxide)	7	7,700	ST V	541
Vegetable Tannin Extract, Chesnut		5,000	LT	16,835
Vegetable Tannin Extract, Quebracho		28,000	LT	143,541
Vegetable Tannin Extract, Wattle		15,000	LT	16,398
Zinc	26	1,425,000	ST	375,970

Source: FEMA

CONCLUSION OF HEARINGS

Dr. ENZER. Thank you very much, Mr. Chairman.

Senator McCLURE. Thank you, gentlemen, very much for your answers and for your patience and for your dedication to doing a good job in the areas that have been assigned to you.

Dr. ENZER. Thank you for saying that, Mr. Chairman.

Senator McCLURE. Thank you very much. The subcommittee will be recessed.

[Whereupon, at 12:55 p.m., Friday, June 5, the hearings were concluded, and the subcommittee was recessed, to reconvene at the call of the Chair.]

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